

# PUBLIC HEALTH DEPARTMENT.

## REPORT

ON THE HEALTH OF THE

## CITY OF LIVERPOOL

DURING THE YEAR

— 1936 —

BY

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*Medical Officer of Health.*



LIVERPOOL

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- F. Detailed Statement of Deaths registered in the City.



PUBLIC HEALTH DEPARTMENT,  
MUNICIPAL ANNEXE,  
DALE STREET, LIVERPOOL, 2.

*June, 1937.*

MY LORD MAYOR, LADIES AND GENTLEMEN,

I have the honour to submit to you herewith my sixth Annual Report, relating to the health of the City of Liverpool during the year 1936.

I desire to acknowledge figures and information for inclusion in the Report from the Town Clerk, the City Treasurer, the City Engineer, the City Analyst, the City Bacteriologist, the City Building Surveyor, the Director of Housing and the Chief Veterinary Officer. I am also indebted to the Chief Officers of the City Hospitals, Sanatoria and Institutions for reports and statistics received, as well as to the officers of the voluntary hospitals and various charitable institutions and others who have supplied valuable information for inclusion in the Report.

A perusal of the information from such diverse sources, scattered throughout the following pages, affords a good indication of the co-operation which exists between the Corporation's Public Health Department and the many other agencies, official and voluntary, in the City which affect, directly or indirectly, the health of the community and the individual.

Any survey of the health of a sanitary district such as is contained in the present Report should commence with a discussion of the total population in the area and the birth-rates and death-rates, since such figures prescribe the extent of the authority's Public Health activities and provide an indication of the major problems which require consideration. Commencing, therefore, with the salient vital statistics of the City we find that in 1936 the estimated mid-year population was 867,110, this figure being the same as that of the previous year. The natural increase of births over deaths was 6,220, but it is estimated that this increase was cancelled by the migration of part of the population to the newly-erected houses situated outside the city boundary.

The total number of births was 17,403, giving a birth-rate per 1,000 of the population of 20·1 as contrasted with a figure of 20·0 for the

previous year. The total number of deaths from all causes was 11,183, giving a general death-rate of 12·9 as compared with 13·2 in 1935. Infantile mortality showed a rate of 75 per 1,000 births, as contrasted with the previous year's rate of 83.

Such are the salient vital statistics for the year 1936, and it is noteworthy that both the general death-rate and the infantile mortality rate are the lowest rates ever recorded for the city. The birth-rate of 20·1 per 1,000 is a slight increase on that of 1935 and is considerably above the average for England and Wales, which is 14·8 per 1,000. The number of cases of infectious disease reported to the Health Department was 4,156 less than in the previous year. Scarlet fever showed a reduction of 300 cases, diphtheria 500 cases, chicken pox 950 cases and measles 1,660 cases. Only two deaths occurred from scarlet fever.

The number of deaths reported from cancer was 1,301 as compared with 1,311 in 1935, equivalent to a death rate of 1·50 per 1,000 of the population. The number of deaths from cancer has been increasing yearly and the death-rate from this disease has remained between 1·3 and 1·5 per 1,000 for the past five years. Cancer is now the third principal cause of death and, unless some means of prevention is discovered in the meantime, this position is likely to be maintained.

The statistics for the year 1936 are based on the new registration districts in accordance with the scheme formulated by the City Council and the Registrar General, which came into operation on October 1st, 1934, and are comparable with the statistics for the year 1935 only.

The work in connection with the demolition of insanitary property has progressed on the lines indicated in the report for 1933. During 1936 the Medical Officer of Health made official representations to the City Council in respect of 114 Clearance Areas and 3,511 insanitary houses.

The Liverpool Corporation Act, 1936, came into operation on August 1st, 1936. On page 286 will be found a brief outline of the clauses which are of importance from a public health aspect. It is hoped that by the use of the provisions of section 83 regarding the prohibition of the sale of verminous articles the infestation of houses by means of verminous second-hand furniture will be greatly diminished.

As in previous years, efforts have been directed towards the general improvement and modernising of the hospitals to allow for their increasing use and for a more rapid turnover of cases. In this connection the provision of continuation departments will probably relieve some of the pressure on the wards of the general hospitals. During the year the contract was placed for the erection of a continuation department, including an ante-natal clinic, at Mill Road Infirmary, and plans are being prepared for a similar department at Walton Hospital. At Fazakerley Isolation Hospital four blocks of cubicles to accommodate 64 patients are under construction, and the contract has also been placed for the erection of a new treatment block, consisting of an operating suite, X-ray room and ultra-violet light room, to serve both the Fazakerley Isolation Hospital and Sanatorium. Plans have been also prepared for a labour suite at Mill Road Infirmary. Progress has been made with the extensions of the nurses' homes at the various hospitals to allow for additional accommodation and for a reduction in the hours of nursing. The nurses' home at Smithdown Road Hospital was completed, and those at Walton and Alder Hey Hospitals were expected to be completed early in 1937. Work on the new nurses' home at Fazakerley Hospital has commenced, and extensions are in progress at the City Hospital East, while extensions at Broadgreen Sanatorium are nearly completed.

The re-organisation of the laundry at Fazakerley Isolation Hospital has enabled the laundries at Sparrow Hall and the Fazakerley Annexe to be closed. New machinery has been installed in the laundry at Broadgreen Sanatorium, and the re-organisation of the laundry at Smithdown Road Hospital is nearly completed. Plans for the re-organisation of the laundry at Belmont Road Institution are temporarily held up owing to the inefficient and antiquated boiler and heating services. When the above re-organisations are completed it will be possible to close the laundries at the smaller isolation hospitals.

Increasing use is being made of the ancillary services connected with the hospitals. During the year 54,185 radiological and 88,360 pathological examinations were made, an increase of 2,601 and 9,770 respectively, compared with the corresponding figures for the previous year.

xx:

A perusal of the pages of the present Report will suffice to indicate the large amount of work performed yearly by the Corporation's health services. The volume of work here described could not have reached its present standard of usefulness were it not for the high ideals of duty which animate the medical, inspectorial, nursing and clerical staffs of the Department, and I wish to acknowledge, in cordial terms, my great appreciation of their co-operation with me during the past year.

I would also like to be permitted to express my warm thanks to the Chairmen and members of the Corporation Committees concerned with the Public Health Department for the courtesy and kindness with which they have considered the various suggestions and recommendations made to them.

I am,

Your obedient Servant,

W. M. FRAZER,

*Medical Officer of Health.*

# VITAL STATISTICS.

# CITY OF LIVERPOOL.

## SUMMARY

OF

## VITAL STATISTICS FOR 1936.

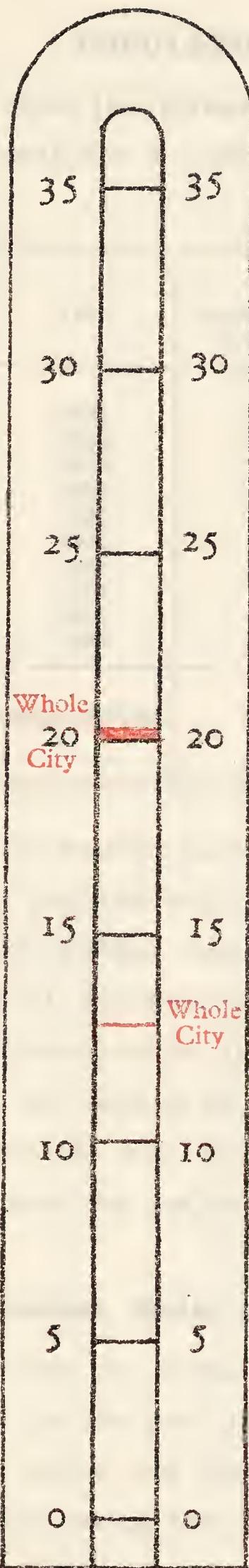
Area (land and inland water)	...	...	...	...27,321 Acres (48 sq. miles)
Population (Census 1931)	...	...	...	...855,688
do. (estimated to middle of Year, 1936)	...	...	...	...867,110
Live Births...	...	...	17,403	Live Birth rate 20·1 } per 1,000 Deaths (all causes) ... 11,183 Death rate 12·9 } of the population
Do. (under 1 year of age)	1,311			Infant Mortality rate } 75 per 1,000 live births,
Do. from :— Seven principal Zymotic diseases	573		Zymotic death rate 0·66 }	
Pulmonary Tuberculosis	713		Pulmonary Tuberculosis death rate 0·82 }	
Other forms of Tuberculosis	126		Non Pulmonary Tuberculosis death rate 0·14 }	per 1,000 of the population
Respiratory diseases	1,423		Respiratory death rate 1·64 }	
Cancer	...	.. 1,301	Cancer death rate 1·50 }	
Maternal Deaths	...	...	Maternal Mortality rate 3·53 per 1,000 live and still births.	

# CITY OF LIVERPOOL.

COMPARATIVE VIEW OF THE BIRTH AND DEATH RATES PER 1,000 POPULATION  
IN THE DIFFERENT DISTRICTS OF THE CITY DURING THE YEAR 1936.

BIRTH RATES  
PER 1,000 POPULATION

Exchange	31.0
Everton	27.2
St. Peter's	24.8
Toxteth	23.0
Kirkdale	22.3
Netherfield	21.4
Fazakerley	20.0
Abercromby	19.4
West Derby	18.2
Wavertree	17.3
Edge Hill, and Sefton Park	17.0



DEATH RATES  
PER 1,000 POPULATION

Everton	17.1
Exchange	16.4
St. Peter's	15.9
Abercromby	15.4
Kirkdale	14.0
Netherfield	13.9
Edge Hill and Sefton Park	13.7
Toxteth Park	13.4
Walton and Walton Park	11.8
Wavertree	10.7
West Derby	10.5
Fazakerley	9.9

DEATHS IN PUBLIC INSTITUTIONS ARE TRANSFERRED TO THE DISTRICTS FROM WHICH THE PATIENTS CAME.

CITY OF LIVERPOOL

## POPULATION.

The following table shows the increase of births over deaths, i.e., the natural increase of population for the City of Liverpool during the last ten years:—

Year.	Excess of Births over Deaths.
1927	7,146
1928	7,688
1929	5,707
1930	7,593
1931	6,383
1932	6,779
1933	4,485
1934	6,274
1935	5,900
1936	6,220
<hr/>	
Yearly Average 1927/36	6,417

As indicated above, the natural increase of population for the City of Liverpool during the year 1936 was 6,220. This increase was largely reduced not only by the normal rate of migration but also by the number of persons who left Liverpool during the year to reside in the new Housing Estates situated outside the city boundary. Accordingly no change was made in the estimate of population for 1936, the figure adopted being the same as that for 1935, namely, 867,110. The Registrar-General's estimate was 846,400.

## Populations, Births and Deaths.

The following table shows the estimated population, the number of births and deaths, and the rate per 1,000 in each district of the city for the year 1936, the births and deaths registered at the various hospitals and institutions having been transferred to the districts of residence.

Registration Sub-Districts.	Estimated Mid-Year Population 1936.	BIRTHS.		DEATHS.	
		Number of Births.	Rate per 1,000.	Number of Deaths.	Rate per 1,000.
EXCHANGE	49,383	1,530	31·0	810	16·4
ABERCROMBY	23,571	458	19·4	364	15·4
ST. PETER'S	52,372	1,300	24·8	833	15·9
TOXTETH PARK	90,883	2,092	23·0	1,223	13·4
EDGE HILL & SEFTON PARK	114,993	1,959	17·0	1,577	13·7
WAVERTREE	102,308	1,767	17·3	1,094	10·7
FAZAKERLEY	69,988	1,397	20·0	690	9·9
WALTON & WALTON PARK	90,996	1,184	13·0	1,071	11·8
KIRKDALE	60,767	1,356	22·3	850	14·0
NETHERFIELD	73,234	1,566	21·4	1,018	13·9
EVERTON	30,074	818	27·2	513	17·1
WEST DERBY	108,541	1,976	18·2	1,140	10·5
	867,110	17,403	20·1	11,183	12·9

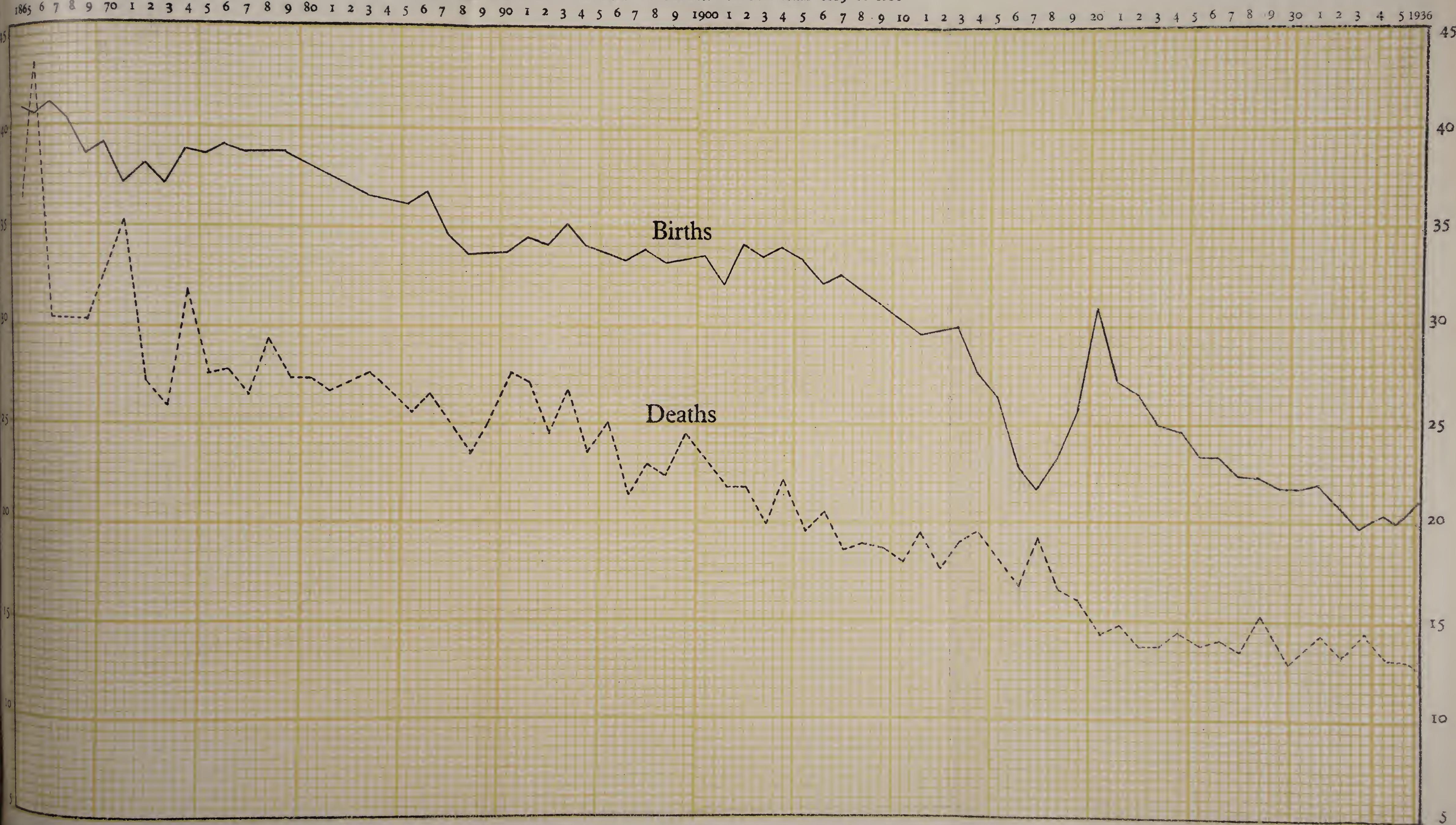
The following table shows the population, births and deaths, with birth and death rates, during the last 20 years (1917 to 1936):—

Year.	Estimated Mid-Year Population.	No. of Births.	Birth Rate per 1,000 of Population.	No. of Deaths.	Death Rate per 1,000 of Population.
1917	791,828	17,906	22·6	13,093	16·5
1918	798,048	17,133	21·5	15,267	19·1
1919	804,316	18,694	23·2	13,283	16·5
1920	810,632	25,039	30·9	12,852	15·8
1921	817,000	21,904	26·8	11,686	14·3
1922	820,663	21,467	26·1	11,992	14·8
1923	824,342	20,695	25·1	11,405	13·8
1924	828,038	20,559	24·8	11,390	13·7
1925	831,750	19,592	23·6	11,902	14·3
1926	835,479	19,792	23·7	11,626	13·9
1927	839,223	19,020	22·7	11,874	14·1
1928*	845,093	19,120	22·6	11,432	13·5
1929	848,873	18,888	22·2	13,181	15·5
1930	852,669	18,881	22·1	11,288	13·2
1931	856,483	18,626	21·7	12,243	14·3
1932*	861,935	18,149	21·0	11,370	13·2
1933	866,013	16,929	19·5	12,444	14·4
1934	866,013	17,593	20·3	11,319	13·1
1935	867,110	17,347	20·0	11,447	13·2
1936	867,110	17,403	20·1	11,183	12·9

\* City area extended

# CITY OF LIVERPOOL.

BIRTH AND DEATH RATES PER 1000 POPULATION FOR THE YEARS 1865 TO 1936





## BIRTHS.

The number of live births recorded during the year 1936 within the city was 17,403, equal to a rate of 20·1 per 1,000 of the population, the average of the previous five years (1931-1935) being 20·5. Of the total births, 8,896 were males, and 8,507 were females. The number of illegitimate live births was 807, or 4·4 per cent. of the total births, 412 being males and 395 females.

The birth-rate calculated upon the Registrar-General's estimate of population was 20·6.

The Registrar-General intimated that 253 births (146 males and 109 females) should be added to and 1,250 births (658 males and 592 females) deducted from the total number of births registered in the city. These corrections for transferable births having been made, the net figures are as given above.

The birth rate in the City of Liverpool was considerably above the average of the great towns, which was 14·9 per 1,000 of the population, as well as of England Wales taken as a whole, where the rate was 14·8 per 1,000.

The number of still-births registered was 708, as shown in the following table. This represented 39·1 per thousand of the total (live and still) births registered and 0·82 per 1,000 of the estimated population. The total birth rate therefore (live and still births) was equal to 20·89 per 1,000 of the population.

### *Live Births.*

	Males.	Females.	Total.
Legitimate ... ... ...	8,484	8,112	16,596
Illegitimate ... ... ...	412	395	807
	8,896	8,507	17,403

### *Still-Births.*

	Males.	Females.	Total.
Legitimate ... ... ...	358	312	670
Illegitimate ... ... ...	22	16	38
	380	328	708

## DEATHS.

The total deaths registered in the city during the year numbered 12,118. Of these deaths 1,290 were those of non-residents, chiefly occurring in public institutions, nursing homes, etc., and these were excluded from the returns. On the other hand, the deaths of 355 Liverpool residents which occurred in other districts and in the County Mental Hospitals, etc., were included in the returns for the year.

This gave a corrected number of deaths of 11,183, being 5,916 males and 5,267 females for the year, equal to a death rate of 12·9 per 1,000 of the population, this being the lowest rate recorded for the city. The death rate for England and Wales was 12·1, and that of the great towns was 12·3.

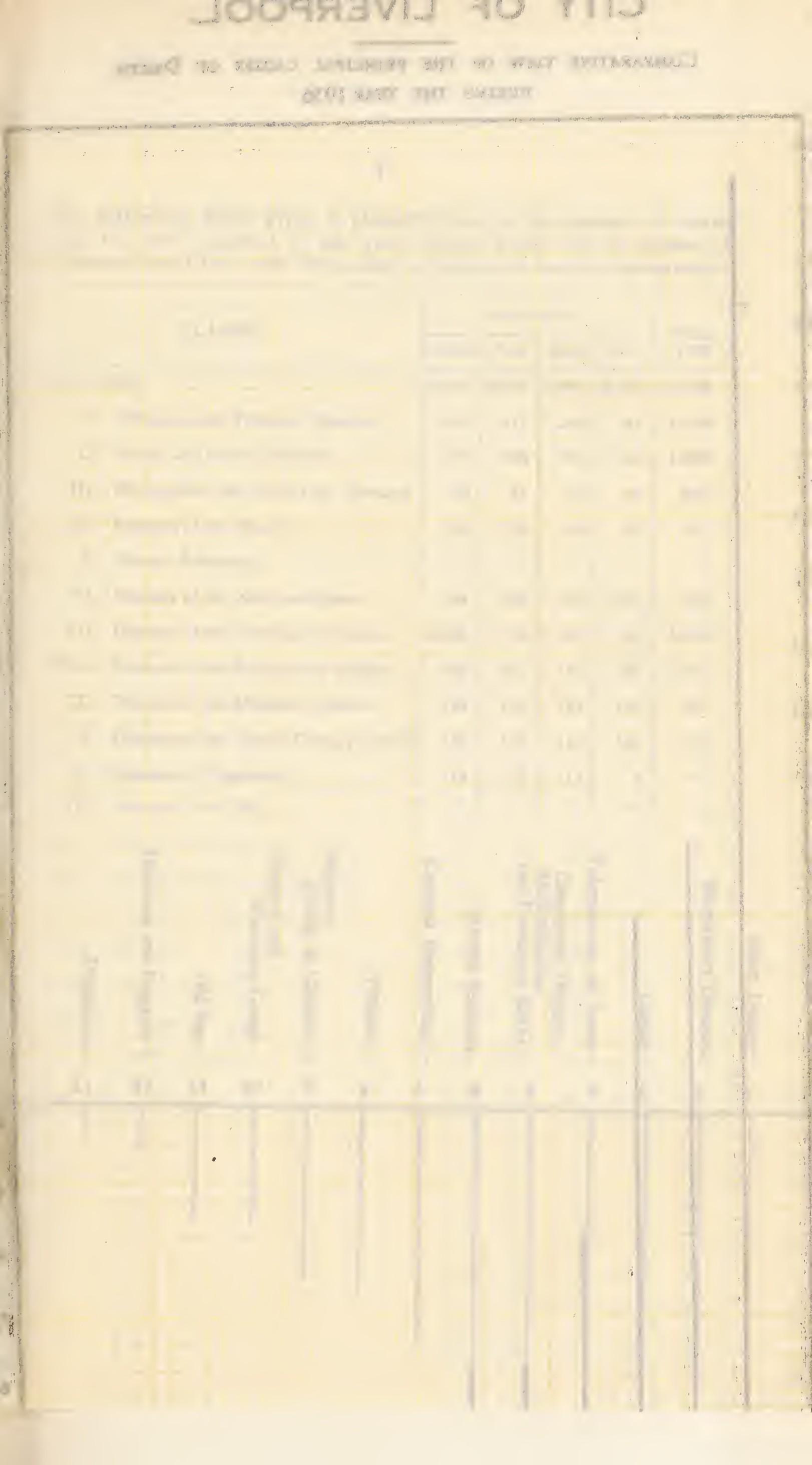
The death rate for Liverpool calculated on the Registrar-General's estimate of population was 13·2.

During the five years (1911-1915) the average death rate was 18·6 per 1,000, whilst during the five years (1931-1935) the average rate was 13·6 per 1,000.

A comparison of the table on page 14 with previous reports will show that this improvement is not confined to the infant mortality nor to the mortality at any particular age, but is a general improvement affecting the whole of the population. It is plain that any variation in the *proportions* living at the respective age-periods would affect the death rate, and this with absolutely no change whatever in the condition of municipal sanitation. These proportions, however, vary very slowly and very slightly year by year in each district, so that yearly comparisons of the mortality rate of the same district may be fairly made, but one district should not be put into comparison with another unless the age and sex conditions of each are known, and the necessary corrections made.

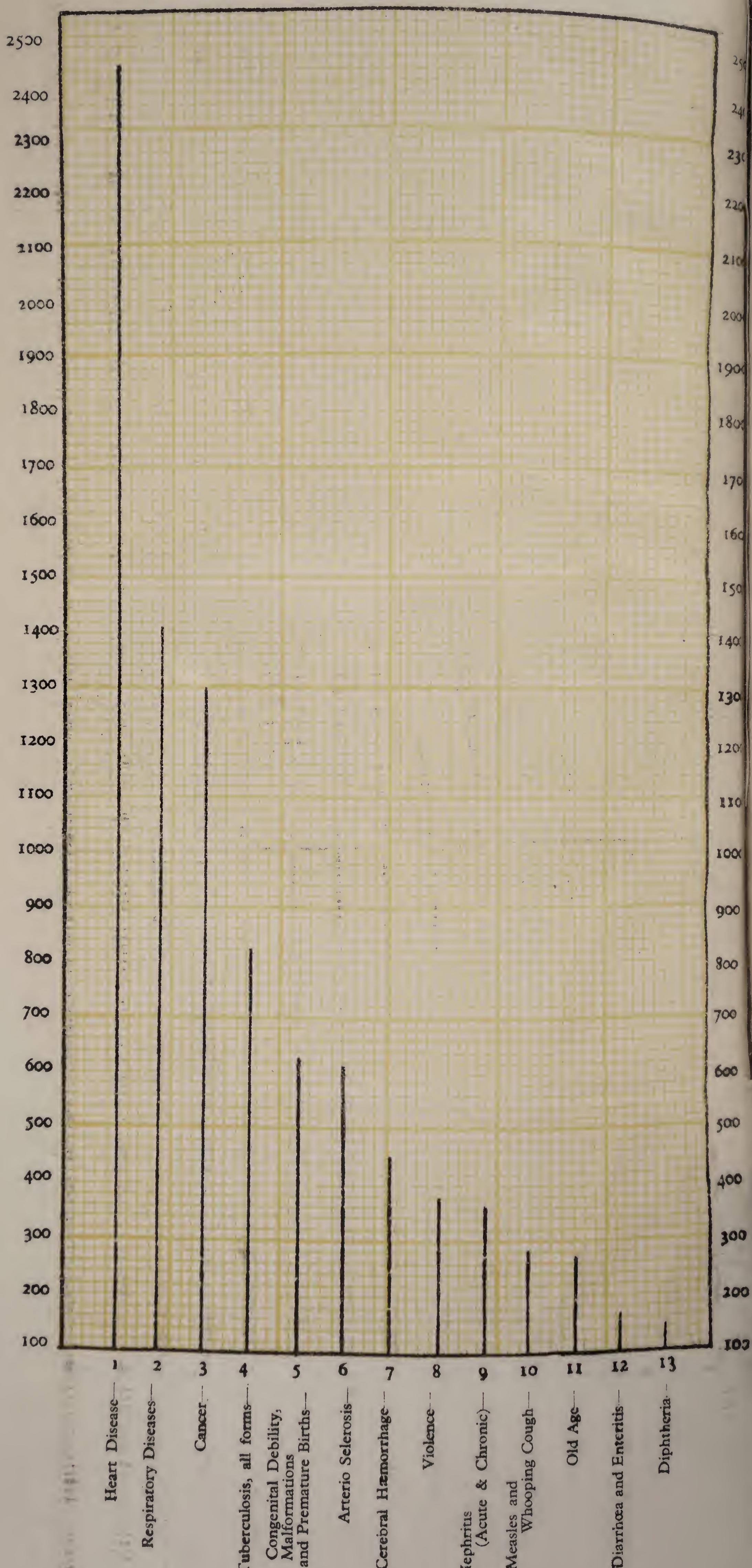
### Causes of Death.

The Short List of Causes of Death appears in Appendix C. Fuller details as to the causes of death are set out in Appendix F; in the same table the various age periods at which deaths took place and the districts in which they occurred will also be found.



# CITY OF LIVERPOOL.

COMPARATIVE VIEW OF THE PRINCIPAL CAUSES OF DEATH  
DURING THE YEAR 1936



The following table gives a classification of the causes of death during the four quarters of the year, shown under the 18 classes of the International List, and the number of deaths at various age-groups:

CLASSES.		QUARTERS.				YEAR 1936
		March	June	Sept.	Dec.	
ALL CAUSES	...	3,461	2,677	2,160	2,885	11,183
I. Infectious and Parasitic Diseases	...	542	371	265	341	1,519
II. Cancer and Other Tumours	...	327	323	332	384	1,366
III. Rheumatism and other Gen. Diseases		70	61	48	56	235
IV. Diseases of the Blood	...	30	26	15	30	101
V. Chronic Poisoning	...	1	1	—	—	2
VI. Diseases of the Nervous System	...	194	209	188	231	822
VII. Diseases of the Circulatory System	...	1,068	742	566	820	3,196
VIII. Diseases of the Respiratory System	...	559	301	173	390	1,423
IX. Diseases of the Digestive System	...	129	150	124	144	547
X. Diseases of the Genito-Urinary System		150	152	116	140	558
XI. Diseases of Pregnancy	...	19	22	14	9	64
XII. Diseases of the Skin	...	13	9	9	13	44
XIII. Diseases of the Bones	...	7	7	6	8	28
XIV. Congenital Malformations	...	26	27	27	27	107
XV. Diseases of Early Infancy	...	154	127	118	118	517
XVI. Old Age	...	75	66	55	81	277
XVII. Deaths from Violence	...	95	81	97	91	364
XVIII. Ill-defined Diseases	...	2	2	7	2	13
Ages at Death	Under 1 year	413	318	263	317	1,311
	1—	244	121	64	111	540
	5—	58	31	47	52	188
	10—	35	32	26	36	129
	15—	57	46	36	38	177
	20—	78	71	68	59	276
	25—	327	286	234	295	1,142
	45—	891	736	570	786	2,983
	65—	1,358	1,036	852	1,191	4,437

The following tables give Comparative Statements of Vital Statistics during the years 1932, 1933, 1934, 1935 and 1936.

### BIRTHS.

		BIRTHS.					BIRTH RATES per 1,000 population.				
		1932	1933	1934	1935	1936	1932	1933	1934	1935	1936
1st quarter	...	4,963	4,631	4,831	4,490	4,546	23·0	21·4	22·3	20·7	21·0
2nd „	...	4,924	4,512	4,760	4,651	4,694	22·9	20·8	22·0	21·5	21·6
3rd „	...	4,535	4,361	4,586	4,567	4,524	21·0	20·1	21·2	21·1	20·9
4th „	...	4,184	3,988	4,118	4,303	4,644	19·4	18·4	19·0	19·8	21·4
		18,606	17,492	18,295	18,011	18,408					
Corrected for transfers per Registrar Gen.		18,149	16,929	17,593	17,347	17,403	21·0	19·5	20·3	20·0	20·0

### DEATHS.

		DEATHS					DEATH RATES per 1,000 population.				
		1932	1933	1934	1935	1936	1932	1933	1934	1935	1936
1st quarter	...	3,346	4,167	3,455	3,189	3,461	15·5	19·2	15·9	14·7	16·1
2nd „	...	2,861	2,749	2,944	2,701	2,677	13·3	12·7	13·6	12·5	12·1
3rd „	...	2,293	2,402	2,271	2,325	2,160	10·6	11·1	10·5	10·7	10·1
4th „	...	2,870	3,126	2,649	3,232	2,885	13·5	14·4	12·2	14·9	13·3
		11,370	12,444	11,319	11,447	11,183	13·2	14·4	13·1	13·2	12·1

### DEATHS OF INFANTS UNDER 1 YEAR OF AGE.

		DEATHS.					DEATH RATES per 1,000 births registered.				
		1932	1933	1934	1935	1936	1932	1933	1934	1935	1936
1st quarter	...	482	458	412	309	413	97	99	85	69	71
2nd „	...	373	377	362	297	318	76	83	76	64	61
3rd „	...	338	402	298	346	263	75	92	65	76	71
4th „	...	453	418	346	493	317	108	105	84	116	111
		1,646	1,655	1,418	1,445	1,311	91	98	81	83	83

The following table shows deaths at various age periods, expressed as a percentage of total deaths, for each year 1915 to 1936:—

Year	Under 5 years.	AT AGES—YEARS.									
		5—	10—	20—	30—	40—	50—	60—	70—	80—	
1915	... % 33	% 2	% 4	% 4	% 7	% 9	% 12	% 13	% 12	% 4	100
1916	... 30	3	4	5	6	9	12	14	13	4	100
1917	... 29	3	4	5	7	9	12	14	13	4	100
1918	... 29	5	6	8	8	9	11	12	9	3	100
1919	... 25	4	5	7	8	9	12	13	13	4	100
1915-1919 (average)	29	3	5	6	7	9	12	13	12	4	100
1920	... 33	2	4	5	7	9	11	13	12	4	100
1921	... 33	2	4	5	6	9	11	13	12	5	100
1922	... 28	2	4	5	6	9	12	15	14	5	100
1923	... 30	2	4	5	6	9	12	14	13	5	100
1924	... 29	2	4	4	6	8	12	15	15	5	100
1920-1924 (average)	30	2	4	5	6	9	12	14	13	5	100
1925	... 28	2	4	4	5	9	12	15	15	6	100
1926	... 28	2	3	5	6	9	12	15	14	6	100
1927	... 25	2	3	5	5	9	12	16	16	7	100
1928	... 25	2	4	5	5	9	12	16	16	6	100
1929	... 23	3	3	5	5	9	12	16	17	7	100
1925-1929 (average)	26	2	3	5	5	9	12	16	16	6	100
1930	... 20	3	4	5	5	9	14	17	16	7	100
1931	... 23	2	3	5	5	8	12	17	18	7	100
1932	... 22	2	3	5	5	8	13	17	17	8	100
1933	... 21	2	3	5	5	8	13	17	18	8	100
1934	... 20	2	3	5	6	8	12	18	18	8	100
1930-1934 (average)	21	2	3	5	5	8	13	17	18	8	100
1935	... 17	2	3	5	5	8	13	19	20	8	100
1936	... 16	2	3	5	5	7	14	19	21	8	100

### Analysis of Decline in Mortality.

The accompanying tables (pages 12 and 13) show the deaths that have occurred in the city of Liverpool during the past 66 years. These have been separated into five principal classes of disease which are likely to be affected by the activities of the Health and other Municipal Departments, namely, infective diseases, tubercular diseases, respiratory diseases (including influenza), and digestive diseases (including diarrhoea and enteritis). These classes include the greater part of the diseases of infective origin. The deaths from cancer are placed in a separate column.

Despite the very great increase in population since 1871, the population having nearly doubled since then, the actual numbers of deaths per annum have fallen from an average of 14,700 in the decennium 1871-1880 to 11,183 in the year 1936. The general death rate has fallen from 28.5 to 12.9 per thousand, a fall of more than 50 per cent.

The greatest proportional decline has been experienced in the group of infective diseases, which includes all the infectious diseases with the exception of influenza; the decline has been steady and uniform, and the deaths now registered in this group exhibit a decline of no less than 86.6 per cent. during the 66 years.

A similar steady decline has been shown by the tubercular diseases, which have fallen to 27.8 per cent. of the earlier figure. These deaths still account for 7.5 per cent. of the total.

In the group of respiratory diseases, although there has been a reduction in the death rate of 70 per cent., during the period under review, namely, between 1871-1880 and 1936, the decline has not been continuous; rises occurred in 1881-90 and in 1911-20, and again in 1929

and 1933, due in all cases to the prevalence of influenza. Although a marked decline in respiratory deaths has occurred, this decline is not commensurate with that recorded in deaths from all causes.

Digestive diseases, of which diarrhoea and other digestive diseases of infants form the most important section, showed at first a slight decline from 1871 to 1890; in 1891-1900 there was a rise to 107 per cent. of the rate experienced in 1871-80, taking the latter rate as equal to 100. From that time on there has been a most marked and rapid decline to 21 per cent. of the 1871-80 rate of mortality. This decline coincides in time with the great efforts that have been put forward in this city for the prevention of infantile mortality.

In contrast, however, there has been a considerable increase in the deaths from cancer during the past 66 years (see pages 12 and 13). The rate of mortality is now nearly four times as high as in the seventies of last century. This increase is, however, mainly due to the increasing longevity of the people and to the better diagnosis of the disease. The increasing proportion of persons dying in later life is well shown in the table on page 9, from which it will be seen that since 1915 the proportion of deaths at ages 70 and over has increased from 16 to 29 per cent.

If the general rate of mortality experienced in 1871-80 had prevailed during the year 1936, there would have been more than twice as many deaths as those actually recorded, viz., 24,706 instead of 11,183, a saving of 13,523 lives being thereby effected.

Deaths from certain Groups of Diseases in each decade from 1871 to 1930, and during 1931, 1932, 1933, 1934, 1935 and 1936.

Years.	(a) Infective diseases (less Diarrhoea and Influenza).	(b) Tubercular diseases.	(c) Respiratory diseases (including Influenza).	(d) Digestive diseases (including Diarrhoea).	Total Deaths from Classes (a), (b), (c) & (d)	(e) Cancer.	Total Deaths from all causes.
1871-1880	27,205	19,869	29,763	14,747	91,584	2,015	147,005
1881-1890	19,748	17,870	32,507	13,186	86,311	2,820	146,195
1891-1900	13,515	16,714	35,819	18,491	84,539	4,223	145,522
1901-1910	13,967	16,054	32,995	18,163	81,179	6,480	150,962
1911-1920	10,417	14,946	36,480	12,282	74,125	7,603	137,223
1921-1930	7,831	12,664	29,447	8,184	58,126	9,852	117,756
1931	947	1,153	2,742	658	5,500	1,128	12,243
1932	826	1,139	1,905	654	4,524	1,167	11,370
1933	808	1,157	2,466	729	5,160	1,232	12,444
1934	780	996	1,792	563	4,131	1,276	11,319
1935	560	935	1,879	654	4,028	1,311	11,447
1936	614	839	1,489	547	3,489	1,301	11,183

Deaths expressed as a percentage of total deaths from all causes (Proportionate Mortality).

1871-1880	19.2	13.5	20.2	10.0	62.9	1.4	100.0
1881-1890	14.1	12.7	23.2	9.4	59.4	2.0	100.0
1891-1900	9.3	10.8	24.6	12.7	57.4	2.9	100.0
1901-1910	8.6	10.6	21.8	12.0	53.0	4.3	100.0
1911-1920	7.9	10.9	27.3	8.9	55.0	5.5	100.0
1921-1930	6.6	10.7	25.0	6.9	49.4	3.4	100.0
1931	7.7	9.4	22.4	5.4	44.9	9.2	100.0
1932	7.3	10.0	16.7	5.7	39.7	10.3	100.0
1933	6.5	9.3	19.8	5.9	41.5	9.9	100.0
1934	6.9	8.8	15.8	5.0	36.5	11.3	100.0
1935	4.9	8.2	16.4	5.7	35.2	11.5	100.0
1936	5.5	7.5	13.3	4.9	31.2	11.6	100.0

Death Rates per 1,000 Population.

Years.	(a) Infective diseases (less Diarrhoea and Influenza).	(b) Tubercular diseases	(c) Respiratory diseases (including Influenza).	(d) Digestive diseases (including Diarrhoea).	Total Deaths from Classes (a), (b), (c) & (d)	(e) Cancer.
1871-1880	5.2	3.6	5.7	2.8	17.3	0.4
1881-1890	3.6	3.2	5.9	2.4	15.1	0.5
1891-1900	2.2	2.7	5.9	3.0	13.8	0.7
1901-1910	1.9	2.2	4.5	2.5	11.1	0.9
1911-1920	1.3	1.9	4.7	1.6	9.5	1.0
1921-1930	0.9	1.4	3.3	0.9	6.5	1.1
1931	1.1	1.3	2.8	0.8	6.0	1.3
1932..	0.9	1.3	2.2	0.7	5.1	1.3
1933..	0.9	1.3	2.8	0.8	5.8	1.4
1934..	0.9	1.1	2.1	0.6	4.7	1.5
1935..	0.7	1.1	2.2	0.7	4.7	1.5
1936..	0.7	1.0	1.7	0.6	4.0	1.5

13

Death-Rates expressed as a percentage of the rates experienced in 1871-1880 (Index Numbers).

1871-1880	100.0	100.0	100.0	100.0
1881-1890	69.0	88.0	85.7	89.1
1891-1900	42.0	75.0	104.0	125.0
1901-1910	36.0	61.0	104.0	175.0
1911-1920	26.0	50.0	79.0	225.0
1921-1930	17.1	40.0	83.0	250.0
1931	21.2	36.1	56.7	67.0
1932..	19.2	36.1	58.8	280.0
1933..	17.3	36.1	36.8	47.7
1934..	17.3	30.5	49.1	50.0
1935..	13.5	30.5	28.6	325.0
1936..	13.4	27.8	25.0	325.0

Table showing the Annual Rate of Mortality per 1,000 and the total number of deaths at each of Twelve Age-Periods during the year 1936 in Liverpool.

\* Column I. indicates the rate of mortality under one year per 1,000 births during the year.

### Deaths in Public Institutions.

In Liverpool the number of deaths which take place in Public Institutions is large—indeed more than half the total. This tends to show the proportion of people who in times of sickness have recourse to public and charitable institutions in the city, and no doubt also suggests that the institutions have a wide reputation and attract sufferers not only from within the city, but from a distance, as shown by the number of non-resident deaths.

The deaths in institutions during the year numbered 7,401, and included 1,290 persons who were non-residents in the city area. The number of deaths in the various institutions is shown in the following table :—

	Total Deaths.	Deaths of non-residents.
Walton Hospital ... ... ...	1,970	502
Belmont Road Institution ... ... ...	506	37
Smithdown Road Hospital ... ... ...	1,301	31
Mill Road Infirmary ... ... ...	827	14
Alder Hey Hospital ... ... ...	585	76
Kirkdale Homes ... ... ...	186	20
Olive Mount Children's Hospital ...	64	2
Royal Infirmary ... ... ...	303	119
David Lewis Northern Hospital ...	238	93
Royal Southern Hospital ... ... ...	210	56
Stanley Hospital ... ... ...	96	29
Liverpool Maternity Hospital ...	73	17
Royal Liverpool Children's Hospital..	190	47
Consumption Hospital ... ... ...	14	11
Liverpool Hahnemann Hospital ...	19	5
The Women's Hospital ... ... ...	17	10
Carried forward ...	6,599	1,069

			Total Deaths.	Deaths of non-residents.
	Brought forward	...	6,599	1,069
Eye and Ear Infirmary	...	...	22	11
Garston Hospital	...	...	40	4
City Hospital North	...	...	63	1
do. South	...	...	33	—
do. East	...	...	51	2
do. Fazakerley	...	...	96	18
do. do. Annexe	...	...	36	2
do. Sparrow Hall	...	...	4	—
Sanatorium, Fazakerley	...	...	80	3
do. Broadgreen	...	...	90	—
St. Joseph's Home	...	...	31	—
Home for Incurables	...	...	7	4
Turner Memorial Home	...	...	11	6
St. Augustine's Home	...	...	30	2
H.M. Prison, Walton	...	...	1	1
Other Institutions, Nursing Homes, etc.	...	...	207	167
			—	—
			7,401	1,290
			—	—

Of the above deaths, 5,439 took place in the transferred institutions, 1,222 in voluntary hospitals, 453 in city hospitals, and 287 in other institutions.

The following table shows the total number of deaths in public institutions during the years 1930 to 1936:—

1930.	1931.	1932.	1933.	1934.	1935.	1936.
6,447	7,053	6,858	7,461	6,987	7,458	7,401

### Infant Mortality.

The following table shows the deaths and death-rates of infants under one year of age for the year 1936:—

	Infant Deaths.	Infant Death Rates.		
All Infants ... ...	1,311	75	per 1,000 live births.	
Legitimate Infants ...	1,234	74	,,	legitimate live births.
Illegitimate Infants ...	77	95	,,	illegitimate live births.

The infant mortality rate for 1936 was 75 per 1,000 births, which was the lowest rate recorded for the city. Reference to the table on page 18 will show that the rate, in spite of fluctuations in individual years, has steadily declined during the past thirty-seven years. At the beginning of this period the figure was nearly 200 deaths per 1,000 births.

The infantile mortality rate in 1936 was less than one-half the rate in the first years of the present century.

It may be noted that the numbers of deaths from all the usual forms of infantile diseases such as broncho-pneumonia, convulsions, prematurity, etc., have been reduced, but the most markedly affected cause is the one which, in former years, frequently proved the most fatal, namely, epidemic diarrhoea. The number of deaths under one year of age from this cause in the year 1936 was 121 as against an average of 1,000, or 1,100 thirty years ago. No doubt this result is due to a variety of causes, but one which has most materially hastened the decline is the initiation and carrying on by the Infant Welfare Committee of schemes for the promotion of the welfare of motherhood and infancy, including the work of the health visitors, pre-maternity and infant clinics and milk depots, and the measures taken to prevent the breeding of flies.

The following table shows the number of deaths of infants below one year of age and the rate per 1,000 births during the last thirty-seven years :—

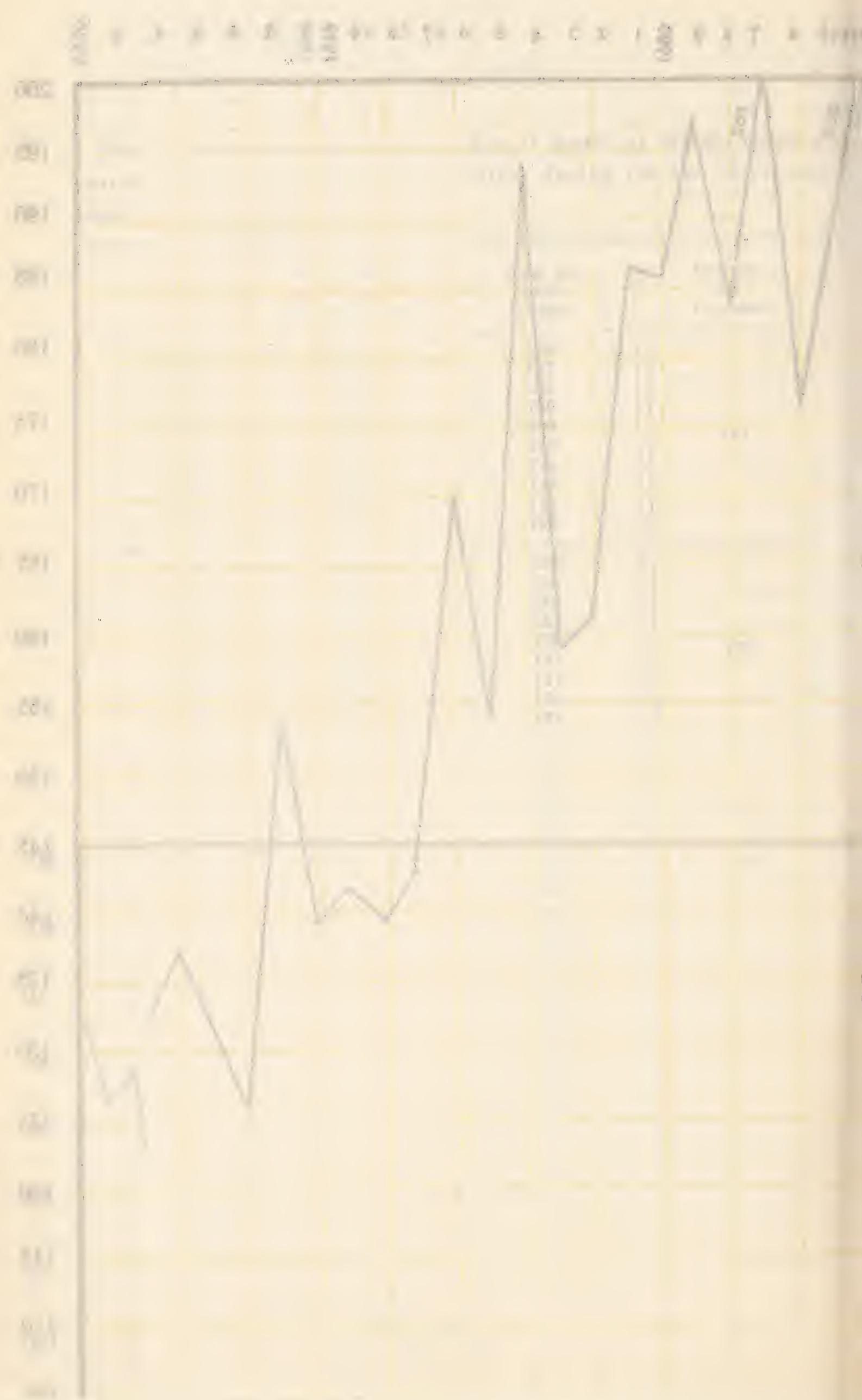
Year.	No. of deaths below one year of age.	Rate per 1,000 births.	Average for 10 years
1900	4,247	186	164
1901	4,138	187	
1902	3,936	162	
1903	3,815	159	
1904	4,780	196	
1905	3,752	154	
1906	4,137	171	
1907	3,383	143	
1908	3,355	140	
1909	3,377	143	
1910	3,216	139	129
1911	3,466	154	
1912	2,778	125	
1913	2,987	132	
1914	3,219	139	
1915	2,866	133	
1916	2,421	117	
1917	2,071	115	
1918	2,137	124	
1919	2,055	110	
1920	2,826	113	100
1921	2,339	107	
1922	2,052	96	
1923	2,058	99	
1924	2,113	103	
1925	1,935	99	
1926	2,066	104	
1927	1,781	94	
1928	1,789	94	
1929	1,822	96	
1930	1,544	82	
1931	1,740	93	
1932	1,646	91	
1933	1,655	98	
1934	1,418	81	
1935	1,445	83	
1936	1,311	75	

# CITY OF LIVERPOOL.

INFANT MORTALITY PER 1,000 BIRTHS, 1895-1936



WERNER KUHN  
RUBBER INDUSTRIES



The relation which the deaths of infants under one year of age has borne to every thousand births in the various districts of the city during the year 1936 is shown in the following table. The detailed causes of death are set out in Appendix D.

DISTRICTS.	Number of births. 1936.	Number of deaths under 1 year of age. 1936.	Deaths under 1 year per 1000 births. 1936.
Exchange .....	1,530	141	92
Abercromby .....	458	47	103
St. Peter's.....	1,300	106	81
Toxteth Park .....	2,092	118	56
Edge Hill & Sefton Park	1,959	168	86
Wavertree .....	1,767	107	60
Fazakerley .....	1,397	107	77
Walton & Walton Park	1,184	84	71
Kirkdale .....	1,356	106	78
Netherfield .....	1,566	146	93
Everton .....	818	75	92
West Derby .....	1,976	106	54
City .....	17,403	1,311	75

The table on page 21 provides an analysis of the principal causes of infantile mortality for successive periods of five years from 1896-1900 onwards. It is divided into three sections, the first giving the *actual number* of births and of deaths under 1 year of age, both the total deaths and the numbers of deaths from seven main categories of disease, which include almost all the deaths ; the second section gives the birth rate and the deaths expressed as rates per 1,000 births, and the third section gives these rates as a percentage of the rates recorded in 1896-1900, such percentages being termed index figures.

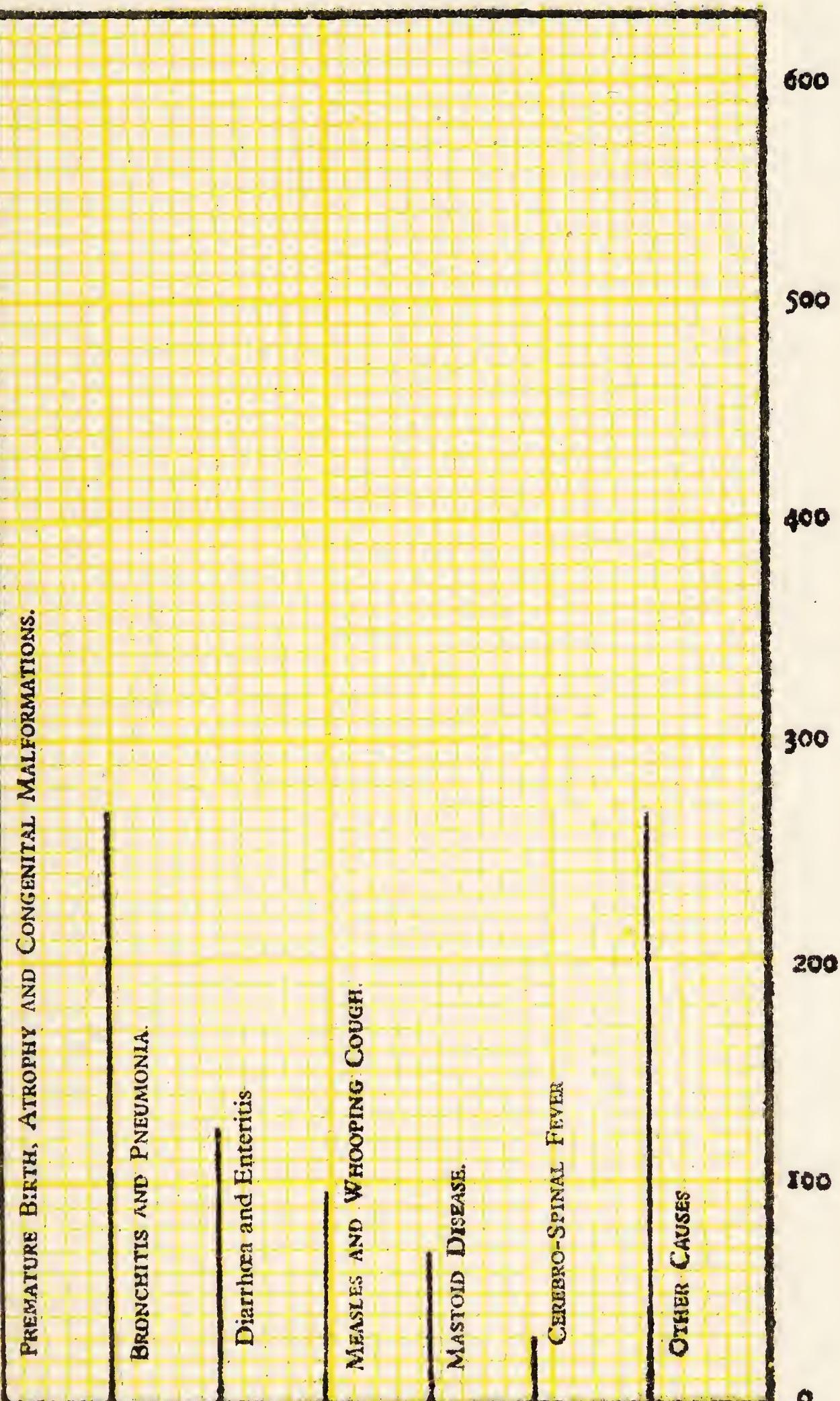
Examination of this table shows that whilst the annual number of births has shown some decline, fluctuating from 22,340 to 17,403 per annum, the number of infantile deaths has fallen from 4,232 to 1,311, and the infantile death rate has accordingly fallen from 189 to 75 per 1,000 births; in other words, this rate has fallen to 39·6 per cent. of the figure recorded in 1896-1900. This great saving of life during the past 40 years coincides with the many improvements in housing and sanitation in Liverpool; and more particularly this fall has occurred simultaneously with the increasing attention which has been directed to infant welfare by the Health Department and other bodies, by the improvement in the provision of assistance for women in child birth and the advice and help extended to mothers and infants by health visitors, ante-natal, post-natal and infant clinics, hospitals and other agencies.

Investigation of the actual causes of death bears this out. The greatest reduction has occurred under the heading Tubercular Diseases--reduction from 100 to 12·9, Digestive Diseases to 14·4, and Nervous Diseases to 21·7. The deaths included under the heading Nervous Diseases are mainly those certified as from convulsions, which are frequently a symptom of the onset of acute infective diarrhoea, by far the commonest cause of death in the group of digestive diseases. Convulsions may also occur at the onset of other infectious diseases, and further may result from injuries during birth. The heading Tubercular Diseases also formerly included many deaths ascribed to Tabes Mesenterica, a term of uncertain meaning, but probably including numerous cases of chronic diarrhoea. The reduction in these three groups of diseases is then mainly a reduction in deaths from diarrhoea.

Equally marked and even more satisfactory is the reduction in the number of deaths from "external causes," which includes overlaying (see page 21) and burns and scalds. The great reduction in the deaths placed in this category testifies to the greater care taken of children and infants by parents. Much less satisfactory are the figures relating to respiratory diseases. The figures in column 8 relating to malformations, premature birth, marasmus, etc., although they show a considerable saving of life—518 lives saved per annum—and though doubtless containing many deaths of children who were so malformed as to be incapable of prolonged life, yet show much room for improvement.

# CITY OF LIVERPOOL.

CHART SHOWING THE PRINCIPAL CAUSES OF DEATHS OF INFANTS  
UNDER ONE YEAR OF AGE DURING 1936



# CITY OF LIVERPOOL

MAP OF THE TERRITORY OF THE CITY OF LIVERPOOL

THE TERRITORY OF THE CITY OF LIVERPOOL  
DIVIDED INTO 1000 ACRES OR 400000 SQUARE YARDS.

500

250

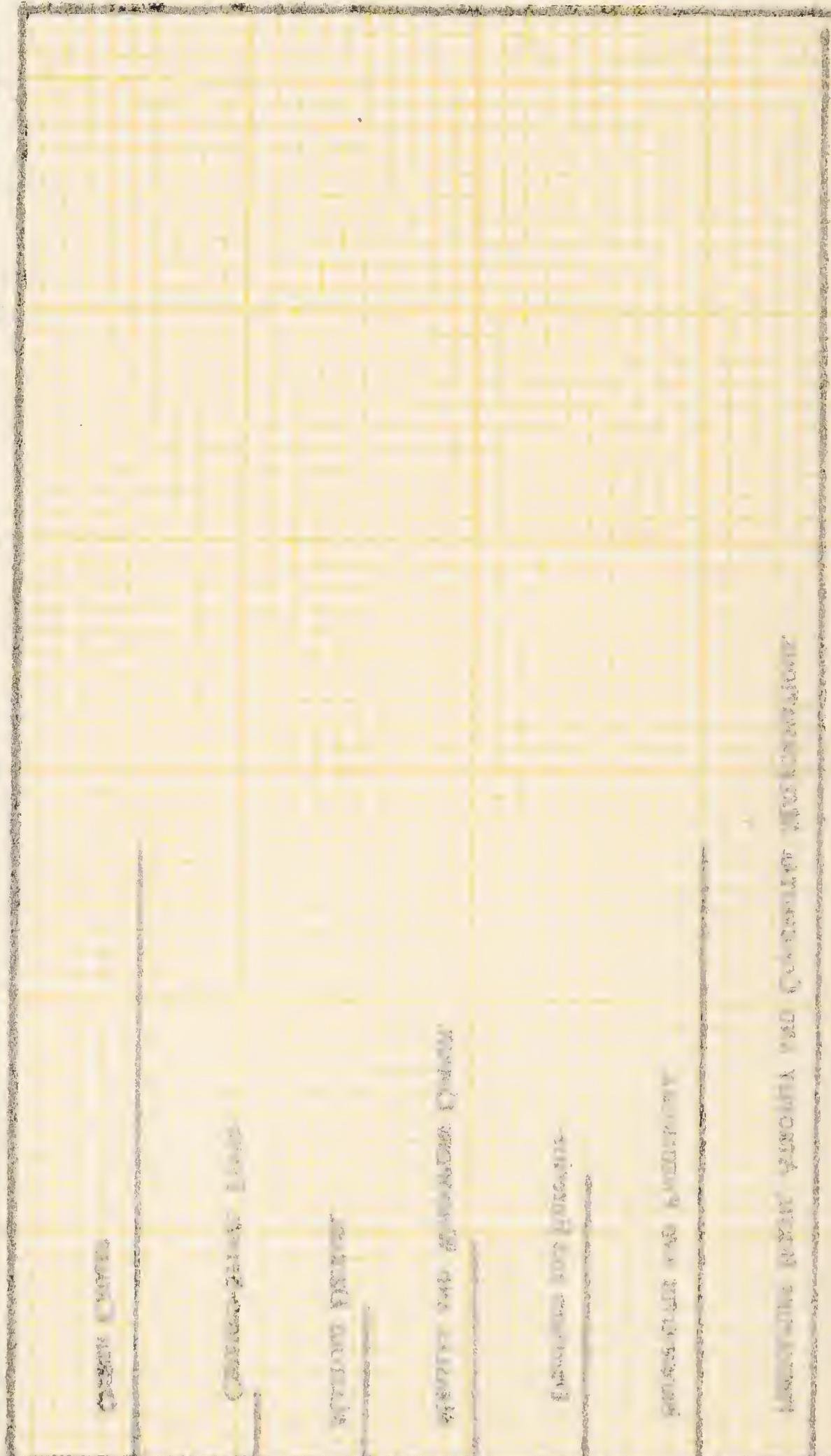
100

50

25

10

0



**Analysis of causes of Infant Mortality in successive quinquennia 1896-1935,  
and the year 1936.**

(A.)—Recorded Deaths.

rs.	1 Births and Birth Rates.	2 Total Deaths Under 1 Year of Age.	3 General Diseases (excluding Tuber- culosis).	4 Tubercular Diseases.	5 Nervous Diseases	6 Respira- tory Diseases	7 Digestive Diseases (including Diarrhoea.)	8 Malforma- tions, Premature Birth, Maras- mus, &c.	9 External Causes.
1900	111,700	21,160	1,508	698	2,476	3,575	6,376	5,698	819
1905	118,801	20,353	1,546	644	2,516	3,484	5,187	5,732	585
1910	118,313	17,739	1,613	465	2,052	3,146	3,902	5,520	539
1915	111,872	15,458	1,309	345	1,432	2,916	3,635	4,953	426
1920	99,451	11,510	1,116	202	1,083	2,821	1,872	4,107	179
1925	104,217	10,497	1,066	200	573	2,776	1,786	3,764	120
1930	95,701	9,002	978	109	401	2,553	1,670	2,981	81
1935	88,644	7,904	902	82	368	2,050	1,184	3,125	67
36	17,403	1,311	149	14	83	270	142	622	13

(B.)—Death Rates per 1,000 Births.

1900	33.4	189	12.7	6.2	22.1	32.0	57.1	51.0	7.3
1905	33.4	172	13.0	5.5	21.2	29.3	43.7	48.1	4.7
1910	32.2	149	13.6	3.9	17.4	26.6	33.0	46.7	4.6
1915	29.3	137	11.6	3.1	12.8	26.1	32.5	43.1	3.8
1920	24.9	116	11.1	2.0	10.9	28.4	18.8	42.0	1.8
1925	25.1	100	10.2	1.9	5.5	26.6	17.1	36.1	1.2
1930	22.1	94	10.2	1.1	4.2	26.7	17.4	31.1	0.8
1935	20.5	89	10.1	0.9	4.2	23.1	13.4	35.3	0.8
36	20.1	75	8.6	0.8	4.8	15.5	8.2	35.7	0.7

## (C.)—Death Rates expressed as a percentage of the rates recorded in 1896-1900.

Years.	1 Birth Rates.	2 Total Deaths Under 1 Year of Age.	3 General Diseases (excluding Tubercu- losis).	4 Tubercular Diseases.	5 Nervous Diseases.	6 Respira- tory Diseases.	7 Digestive Diseases (including Diarrhoea.)	8 Malforma- tions, Premature Birth, Maras- mus, &c.	Ext Ca
1896/1900	100·0	100·0	100·0	100·0	100·0	100·0	100·0	100·0	100·0
1901/1905	100·0	91·0	102·3	89·3	95·9	91·5	76·5	94·0	—
1906/1910	93·0	78·6	107·1	62·9	78·6	83·1	57·8	91·0	—
1911/1915	87·0	72·5	91·9	50·0	57·9	81·5	56·9	84·0	—
1916/1920	76·0	61·4	87·4	32·2	49·3	88·7	32·7	82·0	—
1921/1925	75·1	54·9	80·3	30·6	24·9	84·7	29·9	70·8	—
1926/1930	66·2	49·7	80·3	17·7	18·9	83·5	30·4	60·9	—
1931/1935	61·4	47·2	79·5	14·8	18·9	72·2	23·4	69·2	—
1936	60·2	39·6	67·7	12·9	21·7	48·4	14·4	70·0	—

## Deaths from Diabetes.

The following table shows the incidence of fatal cases of diabetes in Liverpool since 1890:—

	Actual Numbers.			Average.			Rate per 100,000 population.	Ratio of males to females
	Males.	Females.	Total.	Males.	Females.	Total.		
1890-1894	55	45	100	11·0	9·0	20·0	3·8	1·22
1895-1899	99	76	175	19·8	15·2	35·0	5·3	1·80
1900-1904	132	100	232	26·4	20·0	46·4	6·5	1·32
1905-1909	153	124	277	30·6	24·8	55·4	8·4	1·23
1910-1914	162	153	315	32·4	30·6	63·0	8·4	1·06
1915-1919	153	137	290	30·6	27·4	58·0	7·4	1·12
1920-1924	153	203	356	30·6	40·6	71·2	8·6	0·75
1925-1929	168	216	384	33·6	43·2	76·8	8·9	0·78
1930-1934	138	311	449	27·6	62·2	89·8	10·4	0·44
1935	18	60	78	—	—	—	9·0	0·80
1936	32	56	88	—	—	—	10·1	0·57

The death-rate from diabetes rose steadily till 1910-14. It is probable that this rise was largely due to improved diagnosis. During the war the number of deaths showed a distinct fall, especially in 1917 and 1918; this was a real fall and not merely due to the absence of males on military service as, on the average of five years, females were equally affected with males. Since the war the figures have again risen, and are now above the average for the decade 1910-19. The disparity in the incidence, between the two sexes, previously in favour of the females, has since 1904 tended to change. In 1890-1894, 55 per cent. of the deaths were of males; but since 1920-25 the position has been reversed, and in 1936 only 36 per cent. were of males. It is not improbable that the greater attention that has recently been paid to this disease has led to its more frequent recognition as a factor in mortality.

The age at death has also greatly altered and, especially among males, there is a preponderance of deaths at ages over 60 and a reduction in deaths under this age. In the year 1910, 66 per cent. of the deaths were under 65 years of age, in 1929 55 per cent., in 1930 63 per cent., in 1931 56 per cent., in 1932 57 per cent., in 1933 46 per cent., in 1934 43 per cent., in 1935 50 per cent., and in 1936 49 per cent.

## CANCER.

### Treatment of Cancer.

Radium is available for the treatment of cancer at the Liverpool Royal Infirmary and the Liverpool Radium Institute, otherwise known as the Cancer and Skin Hospital. Facilities for deep X-ray therapy are also available at the Radium Institute. An agreement has been made for the treatment by radium or deep X-ray therapy at the Radium Institute of patients transferred from the Municipal Hospitals.

Treatment of cancer by lead therapy has been given at the Municipal Hospitals under the guidance of Dr. Datnow, of the Liverpool Medical Research Organisation which is engaged in research into the most suitable organic lead compounds for the purpose.

### Deaths from Cancer.

During 1936 there were 1,301 deaths attributed to cancer, equivalent to a rate of 1·5 per thousand, whereas in 1871-1880 the rate of mortality was 0·4 per thousand. Comparing the anatomical distribution in 1931-1935 and 1936 it will be observed that there is a tendency for deaths from cancer of the stomach, liver, etc., from cancer of the intestines, etc., and especially from cancer of other organs; mainly internal, to

increase. Such fluctuations, however, are apt to occur under the influence of chance.

Part of the increase in mortality from cancer is due to the increased longevity of the population, more of whom survive into those periods of life when cancer is most frequent. Whilst during the last 50 years there has been an increase in recorded cancer mortality at each age period except the earliest, the increase is most marked at the three later age periods, that is at ages over 60 years. The increase in recorded cancer mortality is mainly at old age.

The increased mortality from cancer was, therefore, (a) mainly among males; (b) most marked in the later years of life. There is evidence to show that the increase is especially in the case of cancer of the stomach, lungs and other internal organs where the disease is most difficult to diagnose. A great part in the increase is probably not real but statistical, and due to improved diagnosis. The term, old age, for example, is less frequently used as a cause of death than in former years; doubtless many deaths from cancer were formerly concealed under this title.

**DEATHS FROM CANCER AT VARIOUS AGE-PERIODS, 1936.**

Organs Affected.	Males.	Females.	Number of Deaths.									All Ages	
			At Ages—Years.										
			Under 10	10-	25-	40-	50-	60-	70-	75-	80-		
Buccal Cavity ...	87	10	—	—	2	6	17	44	20	5	3	97	
Stomach ...	192	140	—	—	8	39	74	113	47	32	19	332	
Liver ... ...	21	20	—	—	—	—	13	14	3	6	5	41	
Intestines ...	149	119	—	—	17	19	64	82	43	29	14	268	
Lungs ... ...	96	27	—	1	8	21	41	34	10	6	2	123	
Female Genital Organs ...	—	109	—	1	7	20	39	27	10	3	2	109	
Breast ... ...	—	102	—	—	3	21	31	22	8	7	10	102	
Skin ... ...	12	12	—	1	—	2	8	6	2	3	2	24	
Other Organs ...	121	84	3	7	10	13	50	54	37	24	7	205	
	678	623	3	10	55	141	337	396	180	115	64	1,301	

Deaths from Cancer, showing the parts of the body affected, during the years 1931 to 1936.

\* The deaths from cancer of lungs prior to 1933 are included in the deaths from cancer of other unspecified organs.

Deaths due to Rheumatic Fever, Pericarditis and Acute Endocarditis (during 1936 and 9 previous years).

## **Mouthy Distribution of Rheumatic Fever Deaths.**

January	...	February	...	March	...	April	...	May	...	June	...	July	...	August	...	September	...	October	...	November	...	December	...	Inward Transfers
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### Deaths from Excessive Drinking, etc.

It is still gratifying to note that the deaths due to or accelerated by excessive drinking continue to remain low, the number being six.

The number of deaths of infants under one year of age from suffocation was seven.

Improved habits and conditions, wider educational influences and other agencies, including those associated with the welfare of motherhood and infancy have all played their part in promoting a more temperate use of alcoholic drinks with results which are eminently satisfactory. Housing operations have unquestionably contributed towards improving the general conditions of life and social habits of the people formerly living in insanitary surroundings in slum areas. The improved condition of the children is especially noticeable; the reports in connection with medical inspection of school children in the poorer localities show welcome improvement, details in reference to this subject being given in the annual reports to the Education Committee.

The following table shows the number of deaths from excessive drinking from the year 1900 to date, together with the number of deaths of infants under one year of age from suffocation for the same period :—

	Deaths from excessive drinking.			Deaths from suffocation under 1 year of age.
	Males.	Females.	Total.	
1900—1909 (yearly average)	101	63	164	94
1910—1919 (yearly average)	53	28	81	51
1920—1929 (yearly average)	7	3	10	12
1930	4	—	4	12
1931	2	5	7	8
1932	3	4	7	5
1933	5	1	6	6
1934	1	3	4	5
1935	4	1	5	3
1936	3	3	6	7

### Deaths from Gas Poisoning.

Deaths from this cause fall under two headings, namely, from accidental poisoning and suicide. The following table gives the number for the last nine years, viz.:—

Year.	Accidental.	Suicide.
1928	8	29
1929	9	49
1930	4	46
1931	5	49
1932	5	47
1933	7	71
1934	9	52
1935	10	41
1936	5	36

### METEOROLOGY.

The Director to the Liverpool Observatory and Tidal Institute, Bidston, has kindly furnished the following tables relating to Meteorological observations made by him at the Observatory, Bidston :—

Latitude  $53^{\circ} 24' N.$  Longitude  $3^{\circ} 4' W.$

Height above the Mean Level of the Sea 202 feet.

1936	Barometer. Mean.	Temperature. Mean.	RAINFALL.		Mean Humidity of the air (Complete Satura- tion 100 %).
			Amount.	No. of days on which 0·01 in. fell.	
January .....	29·458	39·2	3·917	25	87·2
February .....	29·685	36·9	2·122	13	84·2
March .....	29·809	44·6	1·311	13	81·6
April .....	29·996	43·7	0·890	10	69·6
May .....	30·049	51·7	1·008	8	72·5
June .....	29·985	57·2	4·264	15	79·1
July .....	29·757	59·2	2·949	18	78·1
August .....	30·081	59·8	1·496	10	83·5
September .....	30·008	57·6	2·929	17	83·4
October .....	30·067	50·6	1·488	15	73·9
November .....	29·701	43·6	2·756	17	85·2
December .....	29·985	43·2	3·484	19	82·1

**Difference from the Average Quantities observed during  
the last 70 years.**

1936.	BAROMETER.		TEMPERATURE.		RAINFALL.	
	Above Average.	Below Average.	Above Average.	Below Average.	Above Average.	Below Average.
	Inches.	Inches.	Degrees F.	Degrees F.	Inches.	Inches.
January .....	...	0·477	...	0·6	1·702	...
February .....	...	0·244	...	3·4	0·403	...
March. ....	...	0·085	2·4	...	...	0·455
April.....	0·109	...	...	2·8	...	0·764
May .....	0·083	...	...	0·4	...	0·979
June .. ....	...	0·006	...	0·1	2·181	...
July.....	...	0·189	...	1·2	0·246	...
August .....	0·161	...	0·0	0·0	...	1·617
September .....	0·041	...	1·4	...	0·152	...
October .....	0·187	...	0·9	...	...	1·861
November.....	...	0·181	...	0·2	0·162	...
December .....	0·131	...	2·5	...	0·775	...
Year's Totals ...	...	0·039	...	0·1	...	0·055

**Monthly Analysis of Wind Observations during 1936:-**  
**Based on daily observations at fixed hours.**

1936.	Force of Wind				Direction.							
	8 or over.	4-7	1-3	Calm.	N.	N.E.	E.	S.E.	S.	S.W.	W.	N.W.
January .....	1	54	66	3	5	5	21	22	8	23	28	9
February .....	...	71	43	2	11	9	35	15	13	10	11	10
March .. ....	...	67	50	7	7	5	38	24	4	5	29	5
April.....	...	75	44	1	25	14	28	10	4	4	17	17
May .. ....	...	53	69	2	10	19	29	12	4	1	15	32
June .. ....	...	42	76	2	10	7	16	10	8	6	22	39
July.....	...	72	47	5	4	2	3	16	7	12	38	37
August .. ....	...	44	71	9	6	1	1	15	7	9	29	47
September .....	...	33	83	4	12	15	12	23	9	5	16	24
October .. ....	8	57	51	8	7	9	12	13	2	8	30	35
November.....	4	57	48	11	14	3	7	22	17	10	26	10
December .. ....	4	82	34	4	3	1	...	19	19	16	42	20
Year's Total	17	707	682	58	114	90	202	201	102	109	303	285

1936 Week Ended.	Baro- meter Mean.	Temperature.			Rainfall.		Wind Mean direc- tion.	Median Hum- idity %.	Sun- shine hours.
		Maxi- mum.	Mini- mum.	Mean.	Amt. inches	Dur- ation hours.			
January 4	29.32	49.3	37.0	41.99	0.84	15.7	Var.	92.0	4.2
„ 11	29.34	52.0	36.0	42.5	0.55	16.3	Var.	84.3	2.1
„ 18	29.94	41.0	23.2	32.96	0.36	17.2	Var.	81.9	16.1
„ 25	29.3	43.2	23.2	35.87	1.9	35.3	W.	89.9	9.5
February 1	29.24	47.0	36.2	42.4	1.18	31.2	Var.	90.4	7.6
„ 8	29.97	42.5	29.0	35.16	0.35	7.0	E.	79.5	20.0
„ 15	29.9	39.4	24.4	32.26	—	—	E.	82.2	19.4
„ 22	29.4	50.6	30.2	39.77	1.11	28.7	Var.	86.6	20.2
„ 29	29.55	44.5	33.0	38.24	1.13	28.7	Var.	87.3	8.2
March 7	29.7	46.0	30.6	38.67	0.33	10.9	Var.	81.2	21.2
„ 14	29.96	51.0	35.0	40.1	0.3	9.3	E.	82.4	3.8
„ 21	30.02	58.2	36.2	46.6	0.04	2.0	S.E.	82.9	7.8
„ 28	29.63	59.2	41.5	49.6	0.45	13.4	E.	79.8	16.0
April 4	29.84	58.7	32.8	46.27	0.53	31.9	E.	78.9	13.2
„ 11	30.18	52.0	36.2	42.9	—	—	E.	62.9	38.1
„ 18	29.77	48.5	33.5	40.3	0.14	9.2	N.E.	69.8	40.7
„ 25	29.84	56.3	34.8	44.07	0.35	14.3	N.W.	66.8	47.5
May 2	30.3	60.5	39.0	49.16	0.05	1.1	W.	71.8	51.1
„ 9	30.02	63.0	42.0	52.3	0.05	0.9	E.	74.4	34.2
„ 16	30.02	62.0	46.5	52.97	0.47	14.1	Var.	79.6	36.2
„ 23	30.06	73.2	39.0	52.66	0.01	0.3	E.	68.6	57.0
June 30	30.03	67.2	39.2	50.93	0.48	6.4	Var.	72.1	40.9
„ 6	29.95	57.9	41.0	48.8	0.86	22.3	N.W.	75.4	30.2
„ 13	30.02	65.0	46.5	54.9	0.46	8.2	N.W.	79.1	54.5
„ 20	29.96	81.0	47.0	61.89	0.79	7.2	S.E.	73.7	36.5
„ 27	30.07	82.5	54.5	61.4	0.93	4.2	N.W.	83.56	39.7

1936 Week Ended.	Baro- meter Mean.	Temperature.			Rainfall.		Wind Mean direc- tion.	Median Hum- idity %.	Sun- shine hours.	
		Maxi- mum.	Mini- mum.	Mean.	Amt. inches	Dur- ation hours.				
July	4	29·75	71·0	52·0	61·6	1·3	11·6	Var.	80·5	34·1
	11	29·82	68·2	52·0	59·27	0·7	18·3	W.	79·6	27·4
	18	29·63	69·0	52·0	59·3	1·1	12·1	W.	77·6	35·4
	25	29·66	69·8	52·0	58·0	0·63	8·4	W.	77·3	38·8
August	1	29·96	65·0	49·2	58·0	0·75	12·0	W.	80·3	23·6
	8	30·0	67·4	49·5	58·0	0·4	7·0	N.W.	79·5	43·6
	15	29·93	66·5	54·3	60·46	0·14	3·6	Var.	83·1	21·1
	22	30·05	69·1	49·0	58·74	0·59	11·4	Var.	80·4	36·6
	29	30·36	74·6	50·0	62·83	—	—	S.E.	75·1	69·1
September	5	29·86	68·5	53·9	60·3	1·04	10·6	Var.	87·6	11·3
	12	29·76	68·0	50·0	58·73	1·0	22·0	Var.	88·0	15·8
	19	30·22	66·0	50·9	57·4	0·17	4·7	E.	81·8	25·8
	26	30·14	64·8	47·9	57·24	0·7	11·4	Var.	84·0	18·7
October	3	30·23	57·2	39·5	50·4	0·05	0·5	Var.	73·9	28·2
	10	30·22	57·0	40·6	48·2	—	—	E.	70·0	25·0
	17	30·07	59·9	47·0	53·66	0·2	7·5	W.	78·9	18·3
	24	30·06	56·6	44·0	50·84	0·5	8·1	W.	77·0	12·9
	31	29·83	61·0	38·0	48·49	0·76	17·4	N.W.	79·5	13·9
November	7	29·49	54·0	40·0	47·21	0·9	22·0	Var.	85·4	19·3
	14	29·30	50·9	35·8	44·14	1·01	20·9	W.	81·8	10·8
	21	30·18	54·0	31·0	43·2	0·7	15·6	Var.	81·2	18·1
	28	30·19	45·1	28·9	36·9	0·01	2·4	S.E.	92·5	4·6
December	5	29·86	52·0	33·5	44·9	1·74	35·4	W.N.W.	80·4	7·6
	12	30·13	48·8	29·0	36·66	0·46	9·6	S.E.	86·5	4·6
	19	29·64	56·0	33·0	44·5	0·95	24·1	W.	76·8	16·2
	26	30·38	54·0	39·1	45·06	0·17	9·8	W.	83·34	3·9

# CITY OF LIVERPOOL.

Diagram showing Birth Rate (B.R.) per 1,000 of estimated  
 Death Rate (D.R.) population  
 Infant Mortality Rate (I.M.R.), that is, the  
 number of deaths of infants under one  
 year of age per 1,000 births.  
 Estimated population per acre (Pop.)  
 excluding docks and quays and in-  
 cluding parks and open spaces

In each of the  
 Sub-Registration  
 Districts of  
 the City,  
 during the  
 year 1936.

**FAZAKERLEY.**  
 B.R. 20.0  
 D.R. 9.9  
 I.M.R. 77  
 Pop. 13

**WAVERTREE**  
 B.R. 17.3  
 D.R. 10.7  
 I.M.R. 60  
 Pop. 10

**WEST DERBY.**  
 B.R. 18.2  
 D.R. 10.5  
 I.M.R. 54  
 Pop. 36

**WALTON & WALTON PARK**  
 B.R. 13.0  
 D.R. 11.8  
 I.M.R. 71  
 Pop. 47

**EDGE HILL &  
 SEFTON PARK.**  
 B.R. 17.0  
 D.R. 13.7  
 I.M.R. 86  
 Pop. 78

**TOXTETH PARK.**  
 B.R. 23.0  
 D.R. 13.4  
 I.M.R. 56  
 Pop. 55

**NETHERFIELD** Everton  
 B.R. 21.4 D.R. 17.1  
 I.M.R. 92  
 D.R. 13.9 Pop. 145  
 I.M.R. 93  
 Pop. 151

**ST. PETER'S.**  
 B.R. 24.8  
 D.R. 15.9  
 I.M.R. 81  
 Pop. 534

**KIRKDALE.**  
 B.R. 22.3  
 D.R. 14.0  
 I.M.R. 78  
 Pop. 65

**EXCHANGE.**  
 B.R. 31.0  
 D.R. 16.4  
 I.M.R. 92  
 Pop. 59

POPULATION ..	.. whole city	867,110
BIRTH RATE ..	.. do.	20.1
DEATH RATE ..	.. do.	12.9
INFANT MORTALITY RATE	do.	75
POPULATION PER ACRE	do.	32





# **INFECTIOUS DISEASES.**

## NOTIFICATION OF INFECTIOUS DISEASE.

The following is a list of the diseases notifiable in Liverpool during 1936:—

<b>Anthrax</b>	Membranous Croup
Anterior Poliomyelitis	Ophthalmia Neonatorum
Cerebro-spinal Fever	Paratyphoid Fever
Cholera	Plague
*Chickenpox	Pneumonia, Acute Influenza
Continued Fever	Pneumonia, Acute Primary
Diphtheria	Polioencephalitis, Acute
Dysentery	Puerperal Fever
Enteric (Typhoid) Fever	Puerperal Pyrexia
Erysipelas	Relapsing Fever
Encephalitis Lethargica, Acute	Scarlet Fever or Scarlatina
*German Measles	Smallpox
*Measles	Tuberculosis (all forms)
Malaria	Typhus Fever

\* Measles and German Measles ceased to be compulsorily notifiable on 31st October, 1920. A system of voluntary notification has been adopted in regard to these diseases and Chickenpox.

### General Statistical Tables.

In Table I are given the numbers of notifications of infectious disease received from medical practitioners during each month of 1936.

**TABLE I.**

MONTHLY NUMBERS OF NOTIFICATIONS OF INFECTIOUS DISEASE DURING 1936.

January	...	...	...	...	...	3,058
February	...	...	...	...	...	2,188
March	...	...	...	...	...	1,708
April	...	...	...	...	...	1,075
May	...	...	...	...	...	1,082
June	...	...	...	...	...	946
July	...	...	...	...	...	634
August	...	...	...	...	...	551
September	...	...	...	...	...	636
October	...	...	...	...	...	788
November	...	...	...	...	...	876
December	...	...	...	...	...	979
						14,521

In Table II are given the numbers of cases of infectious disease coming to notice during 1936, both by means of notifications from medical practitioners and in other ways, together with the number of patients who were removed to hospital.

TABLE II.

NUMBERS OF CASES OF INFECTIOUS DISEASES COMING TO NOTICE DURING 1936,  
AND NUMBERS ADMITTED TO HOSPITAL.

	January	February	March	April	May	June	July	August	September	October	November	December	Totals	Cases admitted to hospital	Per centage admitted to hospital
Smallpox ...	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Plague ...	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Enteric Fever ...	—	2	2	1	1	—	1	4	4	3	1	2	21	20	95·2
Scarlet Fever ...	131	182	167	146	194	95	82	100	100	143	124	136	1600	1026	64·1
Measles and German Measles	2133	2388	1059	514	480	254	111	74	60	57	47	63	7240	712	9·8
Diphtheria ...	201	232	187	140	167	134	119	179	165	204	215	236	2179	2124	97·5
Puerperal Fever ...	2	6	3	3	4	9	2	5	3	—	3	2	42	40	95·2
Puerperal Pyrexia	19	37	23	25	32	20	31	32	24	34	24	43	344	322	93·6
Erysipelas ...	80	86	75	61	73	42	44	37	43	55	55	62	713	509	71·4
Cerebro-spinal Fever ...	11	14	12	9	8	4	9	8	5	6	3	5	94	89	94·7
Poliomyelitis and Polioencephalitis	—	—	—	—	—	—	1	2	4	6	1	1	15	15	100·0
Ophthalmia Neonatorum ...	41	58	46	50	84	49	76	42	49	81	56	59	691	158	22·9
Pneumonia & Influenzal Pneumonia	145	187	150	124	196	119	93	66	70	157	166	207	1680	622	37·0
Malaria ...	4	2	1	1	1	2	3	6	1	7	5	8	41	27	65·8
Dysentery ...	1	1	—	—	—	—	1	1	—	1	—	2	7	6	88·7
Encephalitis Lethargica ...	2	1	6	1	2	1	3	—	1	4	2	—	23	22	95·6
Whooping Cough ...	102	177	139	71	139	64	26	49	38	36	32	58	931	278	29·9
Anthrax ...	—	—	—	—	—	—	1	—	—	—	—	—	1	1	100·0
Chickenpox ...	162	154	158	97	175	237	124	75	113	134	179	203	1811	144	7·9
<b>TOTALS</b>	<b>...3034</b>	<b>3527</b>	<b>2028</b>	<b>1243</b>	<b>1556</b>	<b>1030</b>	<b>727</b>	<b>680</b>	<b>680</b>	<b>928</b>	<b>913</b>	<b>1087</b>	<b>17433</b>	<b>6115</b>	<b>35·1</b>

The numbers of patients admitted to hospital include the cases which occurred while in hospital.

In Table III are given the numbers of cases of infectious diseases coming to notice during 1936, and also corresponding cases during the previous five years.

TABLE III.

NUMBERS OF CASES OF INFECTIOUS DISEASES DURING 1936 AND THE FIVE PREVIOUS YEARS.

DISEASE.	1931	1932	1933	1934	1935	1936
Smallpox ... ... ...	—	1	—	—	—	—
Plague ... ... ...	—	—	—	—	—	—
Typhus Fever ... ... ...	—	—	—	—	—	—
Enteric Fever ... ... ...	37	54	70	23	30	21
Scarlet Fever ... ... ...	1,407	1,925	5,286	3,574	1,900	1,600
Measles and German Measles ...	7,572	8,816	10,004	11,055	8,907	7,240
Diphtheria ... ... ...	3,256	3,312	2,917	2,913	2,695	2,179
Puerperal Fever ... ...	54	54	44	43	48	42
Erysipelas ... ... ...	510	592	920	819	831	713
Cerebro-spinal Fever ... ...	57	76	64	69	69	94
Poliomyelitis and Polioencephalitis ... ...	7	25	10	9	3	15
Ophthalmia Neonatorum ...	718	668	594	695	670	691
Anthrax ... ... ...	2	2	—	2	2	1
Encephalitis Lethargica ...	35	21	30	30	25	23
Whooping Cough ... ...	2,267	1,596	987	2,437	1,044	931
Malaria ... ... ...	98	24	26	18	15	41
Dysentery ... ... ...	12	7	3	7	3	7
Chickenpox ... ... ...	1,568	2,993	2,888	2,715	2,764	1,811

In Table IV are given the numbers of deaths from infectious diseases during 1936, and also corresponding deaths during the previous five years.

TABLE IV.

NUMBERS OF DEATHS FROM INFECTIOUS DISEASES DURING 1936 AND THE FIVE PREVIOUS YEARS.

DISEASE.	1931	1932	1933	1934	1935	1936
Smallpox ... ... ...	—	—	—	—	—	—
Plague ... ... ...	—	—	—	—	—	—
Typhus Fever ... ... ...	—	—	—	—	—	—
Enteric Fever ... ... ...	6	6	2	—	4	1
Scarlet Fever ... ... ...	11	11	27	19	6	2
Measles and German Measles ...	369	312	299	229	154	176
Diphtheria ... ... ...	197	184	177	177	149	139
Influenza ... ... ...	345	128	342	116	146	66
Puerperal Fever ... ...	20	16	29	25	29	20
Erysipelas ... ... ...	27	42	73	54	55	36
Cerebro-spinal Fever ... ...	47	47	45	37	33	55
Poliomyelitis and Polioencephalitis ... ...	4	11	3	3	—	1
Anthrax ... ... ...	—	—	—	—	—	—
Encephalitis Lethargica ...	26	15	21	24	22	14
Whooping Cough ... ...	189	148	93	172	62	105
Malaria ... ... ...	3	1	2	2	4	3
Dysentery ... ... ...	5	5	2	2	4	3
Chickenpox ... ... ...	1	—	1	—	1	—

In Table V are given the case-rates per 1,000 of the population and the death-rates per 100,000 of the population in respect of the infectious diseases named at the head of the table.

TABLE V.

CASE-RATES AND DEATH-RATES OF INFECTIOUS DISEASE DURING 1936.

		Smallpox.	Enteric Fever.	Scarlet Fever.	Measles.	Diphtheria.	Puerperal Fever.	Erysipelas.	Cerebro-spinal Fever.	Poliomyelitis and Polioencephalitis.	Encephalitis Lethargica.	Malaria
Cases ... ... ...	—	21	1,600	7,240	2,179	42	713	94	15	23	41	
Case-rate per 1,000 inhabitants	... ...	—	0·02	1·80	8·35	2·51	2·32*	0·82	0·11	0·02	0·03	0·05
Deaths ... ... ...	—	1	2	176	139	20	36	55	1	14	3	
Death-rate per 100,000 inhabitants	... ...	—	0·1	0·2	20·3	16·0	110·4†	4·1	6·3	0·1	1·6	0·3

\* Case-rate per 1,000 live and still births.

† Death-rate per 100,000 live and still-births.

## INFECTIOUS SICKNESS.

### Plague.

No case of plague occurred in the city during the year.

### Smallpox.

No case of smallpox occurred in the city during the year.

The following figures for England and Wales show a gradual and remarkable spread of a very mild type of smallpox during the years 1925 to 1930, followed by a rapid decline. Only a few deaths occurred among the thousands of cases reported.

Year.		Cases.		Deaths.
1925	...	5,365	...	9
1926	...	10,205	...	19
1927	...	14,769	...	49
1928	..	12,433	...	53
1929	...	10,975	...	39
1930	...	11,855	...	28
1931	...	5,665	...	9
1932	...	2,070	...	3
1933	...	631	...	2
1934	...	179	...	6
1935	...	1	...	0
1936	...	12	...	0

(Extracted from the Registrar General's Quarterly Returns.)

On account of its world-wide trade, Liverpool must always be one of the channels through which the severe types of smallpox may be imported. Furthermore, the constantly moving population—inwards and outwards—renders the city particularly liable to infection. For that reason it has always been the policy of the department to continue to urge that the only safeguard against smallpox and the risk of death from this disease is vaccination and re-vaccination.

In Liverpool, however, the child population is relatively well vaccinated, as the most recent available figure for 1935 shows that approximately 67·4 per cent. of the children born in Liverpool have been successfully vaccinated.

In Table VI are given the numbers of primary vaccinations in Liverpool during the year 1935 and five previous years.

TABLE VI.

## PRIMARY VACCINATIONS.

	1930	1931	1932	1933	1934	1935
1.—Number of children born ...	19,183	18,917	18,543	17,448	18,230	17,994
2.—Number of primary vaccinations ...	13,711	13,678	13,122	11,921	12,466	12,128
3.—Number of exemption certificates granted ...	2,036	1,993	2,134	2,295	2,536	2,530
4.—Number of certificates of insusceptibility sent ...	115	149	120	96	58	57

In Table VII are given the numbers of primary vaccinations during 1935, arranged in accordance with their recurrence in four districts.

TABLE VII.

## PRIMARY VACCINATIONS IN DISTRICTS DURING 1935.

District.	Sub-District.	No. of children born.	No. of primary vaccinations.	No. of exemptions granted.	No. of certificates of insusceptibility.	Percentage of children successfully vaccinated.
1	TOXTETH PARK ...	1,127	591	245	3	52·4
	SEFTON PARK ...	1,527	889	190	8	58·1
	ST. PETER'S (part of)	414	252	31	3	60·9
	EDGE HILL (part of)	263	149	60	5	56·7
	WAVERTREE ...	786	490	164	5	62·3
2	ABERCROMBY ...	2,736	1,759	512	10	64·3
	ST. PETER'S (part of)	586	416	29	1	71·0
	EXCHANGE ... ...	1,050	808	40	—	76·9
	EVERTON ... ...	1,944	1,382	173	2	71·1
	NETHERFIELD ...	980	738	119	—	75·3
3	WALTON PARK ...	2,182	1,635	178	5	74·9
	WALTON ... ...	756	500	173	2	66·1
	EDGE HILL (part of)	851	489	149	5	57·5
	FAZAKERLEY ...	985	676	204	2	68·6
	WEST DERBY ...	965	655	198	6	67·9
4	KIRKDALE ... ...	842	699	65	—	83·0
Summary	No. 1 District ...	4,117	2,371	690	24	57·6
	No. 2 District ...	7,296	5,103	873	13	69·9
	No. 3 District ...	5,739	3,955	902	20	68·9
	No. 4 District ...	842	699	65	—	83·0
	TOTAL ...	17,994	12,128	2,530	57	67·4

## Typhus Fever.

No case occurred in Liverpool during 1936, and no indigenous case has occurred in the city during the course of the past eighteen years.

### Anthrax.

The importation of large amounts of animal products, which are handled in transit to stores or manufactories, has associated with it the risk of human infection with the anthrax bacillus, causing a condition known as malignant pustule or cutaneous anthrax.

The fatal cases frequently quoted in these reports emphasise the importance of early diagnosis and serum treatment in all cases of this disease, and the Health Department has taken steps to make facilities for diagnosis available for the public.

Posters have been printed on the subject and are affixed in suitable places. A pocket card has also been issued containing full information regarding the appearance and symptoms of cutaneous anthrax and advice on the action to be taken. Arrangements are also made to admit all cases of anthrax or suspected anthrax direct to Fazakerley hospital.

Two cases of anthrax came under treatment at the city hospital, Fazakerley, during 1936. One, with an infection near the front of the throat, was very severe, but fortunately recovered. The patient, a Liverpool resident, was a fruit selector employed by a firm of wholesale fruit merchants, and his work necessitated his attendance at the dock sheds where cased fruit was unloaded from ships arriving at the port. The second was a woman from Runcorn. She was occupied entirely in her domestic duties, and at no time came into direct contact with infected hides, wool or the like, but her husband worked at a local tannery and it is reasonable to assume that his clothes carried spore infected dust from his work and so to his wife at home. Her case was mild and uncomplicated.

Both patients are of interest when the mode of infection is studied. Neither had occasion to handle infected material, but each came into contact with infected dust—the man in the course of his visits to dusty dockside sheds, and the woman, indirectly via her husband's clothing.

In the course of the year, nineteen persons, mainly dock workers and tannery employees, attended at the hospital for investigation as suspected anthrax infections, but in no instance was that disease found.

Boils, carbuncles and various localised septic conditions formed the different suspicious lesions. This practice of attendance is encouraged at all times, since it entails almost negligible trouble at the hospital, when balanced against the possibility of an early diagnosis in so serious a disease.

Special arrangements have also been made for the treatment of cases coming from districts outside Liverpool.

The disinfection of imported dangerous wools is carried out at the Government Wool Disinfecting Station, Love Lane, and the Liverpool Port Sanitary Authority assists by having samples of the untreated wools and those which have passed through the disinfecting process, examined by the City Bacteriologist; this helps to confirm and control the Duckering disinfecting process. During the year 358 samples of treated and untreated wool, hair, etc., were examined and 104 untreated samples showed positive evidence of anthrax infection.

The Ministry of Agriculture has drawn attention to the danger to farm animals in Great Britain in connection with the shipment in foreign ports of commodities containing the spores of anthrax. The disease is prevalent in animals in many parts of the world from which supplies of raw hides, hair, wool and feeding stuffs, e.g., cattle cake and its ingredients, are drawn. Infection may be conveyed to the farm by means of such animal substances from foreign countries, especially those places where inadequate or no precautions are taken.

Anthrax spores may be shaken from the above-mentioned animal products and may become mixed with foodstuffs or hold-sweepings, and thus infection may be indirectly conveyed to animals of the farm.

The spores of the anthrax bacillus have great resisting power, and may remain active for years unless measures are taken to destroy them.

The suggestion is made that special precautions should be adopted so that dried hides, wool, hair, etc., should not be carried, mixed with, or be placed on top of grain or feeding stuffs, and that the holds which have contained animal products of this nature should be thoroughly disinfected; further, that the sweepings of holds containing grain, etc., should not be mixed with other foodstuffs.

### Typhoid and Paratyphoid Fever.

During the year there occurred 10 cases of typhoid fever and 11 cases of paratyphoid fever.

Typhoid fever differs from paratyphoid fever in fatality and complications and is also different epidemiologically. As a rule, typhoid fever can occur with equal frequency in either sex and is largely indifferent to age, whereas paratyphosus occurs in the young rather than the old and tends to occur in females rather than males. Large epidemics of typhosus are often water-borne, and small outbreaks may be due to the consumption of infected shell-fish. On the other hand, the paratyphoid fevers are spread mainly by infected food, including infected milk. For these reasons distinction is made in the tables that follow between the typhoid and paratyphoid fevers.

In Table VIII are given the number of cases occurring in each type of infection together with the sex distribution.

TABLE VIII.  
TYPHOID AND PARATYPHOID FEVER.

Type.	Cases.		Deaths.	
	Male	Female	Male	Female
Typhoid Fever ...	...   ...	6	4	—   1
Paratyphoid—A	...   ...	1	—	—   —
Paratyphoid—B	...   ...	5	5	—   —
Paratyphoid—C	...   ...	—	—	—   —
Unclassified	...   ...	—	—	—   —

The 10 typhoid cases (of which 6 were indigenous) represent a case-rate of 0·01 per 1,000 of the population. The 11 paratyphoid cases (of which 9 were indigenous) represent a case-rate of 0·01 per 1,000 of the population.

In Table IX are given the age and sex distribution of both typhoid and paratyphoid fever cases.

TABLE IX.

TYPHOID AND PARATYPHOID FEVER.—AGE AND SEX DISTRIBUTION.

Age	Typhoid		Paratyphoid	
	Male	Female	Male	Female
Under 1 Year	—	—	—	—
1 +	—	—	—	—
2 +	—	—	—	—
5 +	1	1	2	1
10 +	—	—	1	—
15 +	1	2	1	1
20 +	2	—	1	3
30 +	1	—	1	—
40 +	1	—	—	—
50 +	—	1	—	—
70 +	—	—	—	—
TOTAL ...	6	4	6	5

## TYPHOID AND PARATYPHOID FEVERS IMPORTED FROM OVERSEAS.

During the year, 3 cases of typhoid fever were imported from overseas. These cases were not included in the Tables in the preceding paragraphs.

## Undulant Fever.

No cases of undulant fever were reported during the year.

## Diphtheria.

During 1936, 2,179 cases of diphtheria were reported, a case-rate of 2·51 per 1,000 of the population. Of these cases, 139 proved fatal, making a fatality rate of 6·4 per 100 cases and a mortality rate of 16·0 per 100,000 of the population.

In Table X are given the numbers of cases of diphtheria and of deaths from this disease during 1936 in the various districts of Liverpool.

TABLE X.

DIPHTHERIA—CASES AND DEATHS DURING 1936.

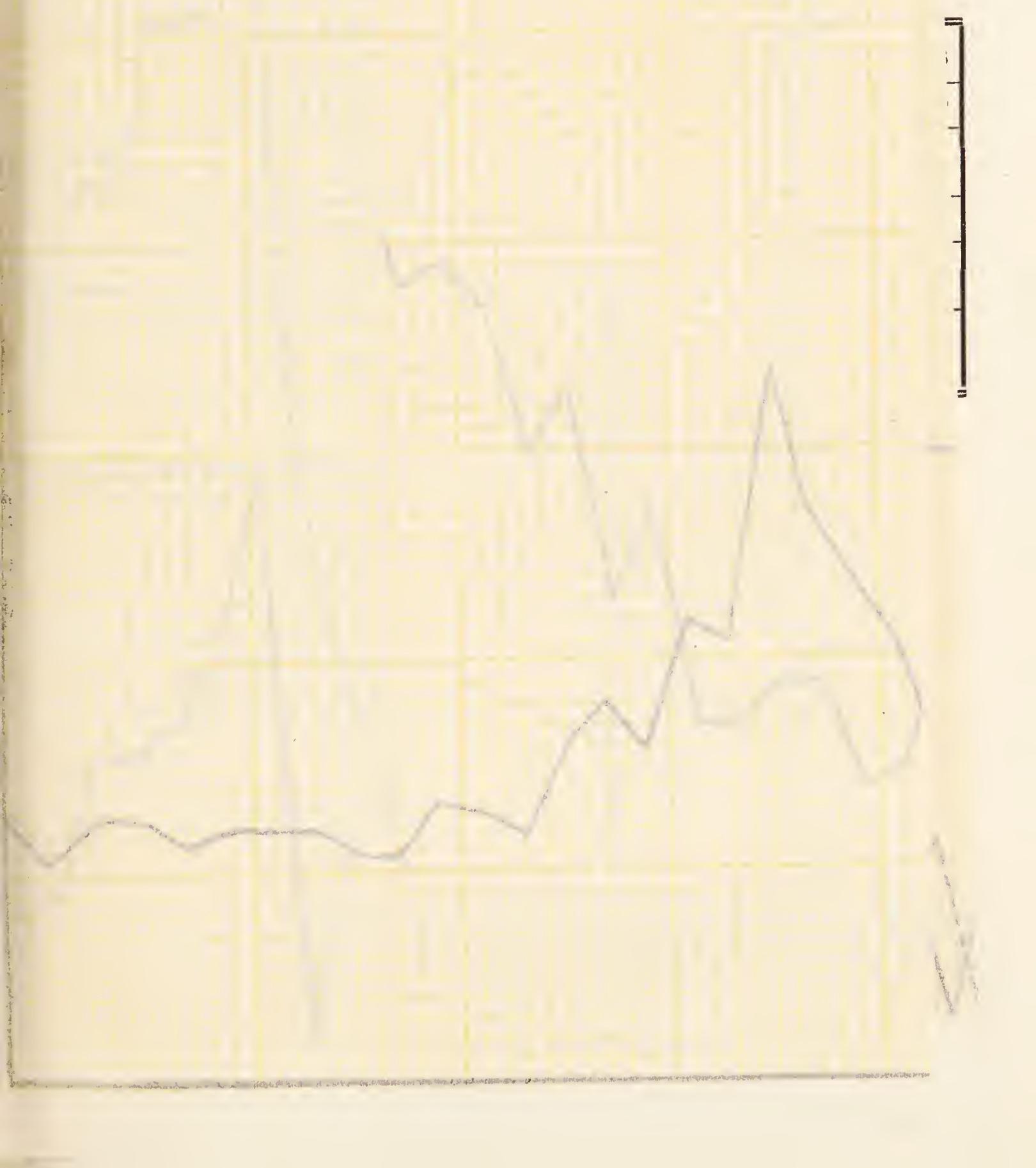
46

District.	Estimated Population, 1936.	Cases.	Deaths.	Attack Rate per 1,000 population.	Death Rate per 100,000 population.	Case Fatality Rate %	Percentage Proportion of Secondary to Primary Cases.	Percentage Proportion of Children under 2 years of age to Total Cases.	Percentage Proportion of Children under 5 years of age to Total Cases.
1. Exchange .....	49,383	142	6	2.9	12.2	4.2	3.5	7.7	46.5
2. Abercromby .....	23,571	62	2	2.6	8.5	3.2	6.4	6.5	41.9
3. St. Peter's .....	52,372	131	8	2.5	15.3	6.1	3.1	3.1	39.7
4. Everton .....	30,074	119	7	4.0	23.3	5.9	6.7	3.4	35.3
5. Netherfield .....	73,234	281	18	3.8	24.6	6.4	5.3	3.5	27.4
6. Kirkdale .....	60,767	199	9	3.3	14.8	4.5	5.5	3.5	22.1
7. Edge Hill & Sefton Park	114,993	208	14	1.8	12.2	6.7	7.7	5.3	31.7
8. Toxteth Park .....	90,883	255	25	2.8	27.5	9.8	6.3	3.1	25.9
9. Walton & Walton Park	90,996	167	10	1.8	11.0	6.0	4.8	4.2	27.5
10. West Derby .....	108,541	270	16	2.5	14.7	5.9	9.3	3.0	25.9
11. Wavertree .....	102,308	174	8	1.7	7.8	4.6	10.9	1.7	24.7
12. Fazakerley .....	69,988	171	16	2.4	22.9	9.4	8.2	4.1	28.1
Central Districts (1 to 3) .....	125,326	335	16	2.7	12.7	4.8	3.9	5.7	43.0
Middle Districts (4 to 9) .....	460,947	1,229	83	2.7	18.0	6.8	6.0	3.8	27.7
Outer Districts (10 to 12) .....	280,837	615	40	2.2	14.2	6.5	9.4	2.9	26.2
Whole City .....	867,110	2,179	139	2.5	16.0	6.4	6.7	3.9	29.6

СОЮЗРЕМ

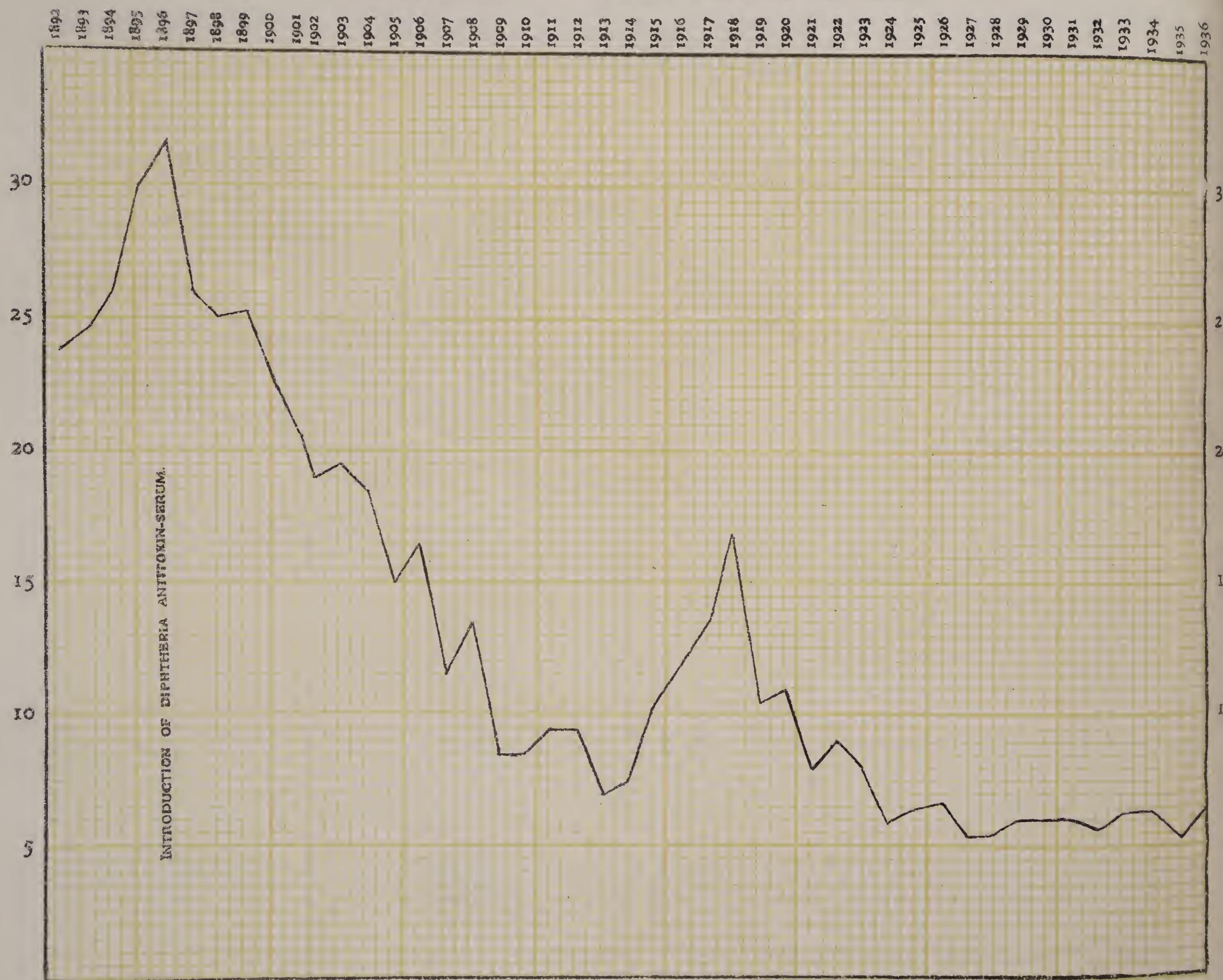
Союз Гидравлика

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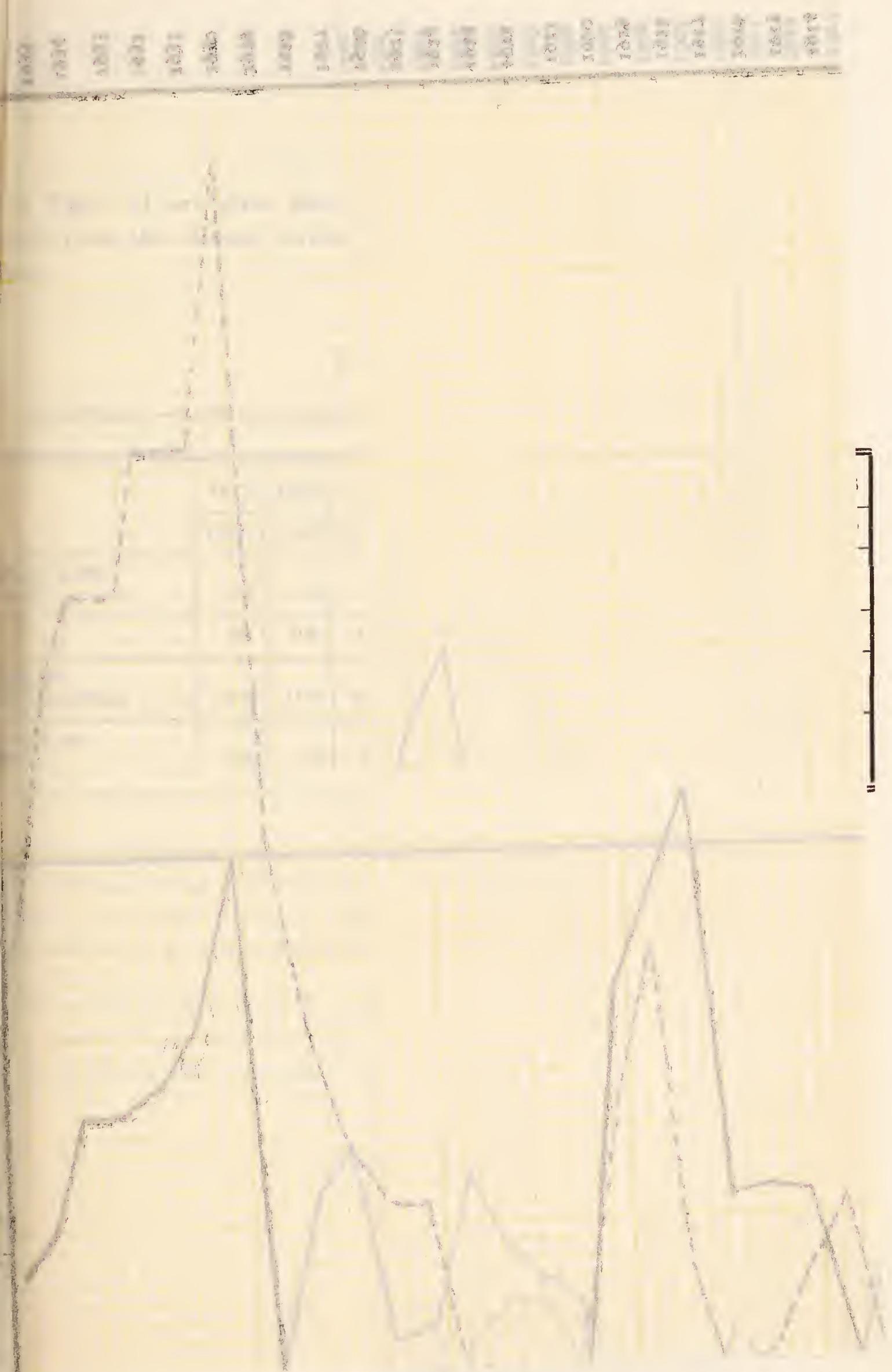
# CITY OF LIVERPOOL.

DIPHTHERIA 1892-1936 FATALITY RATES PER 100 CASES.



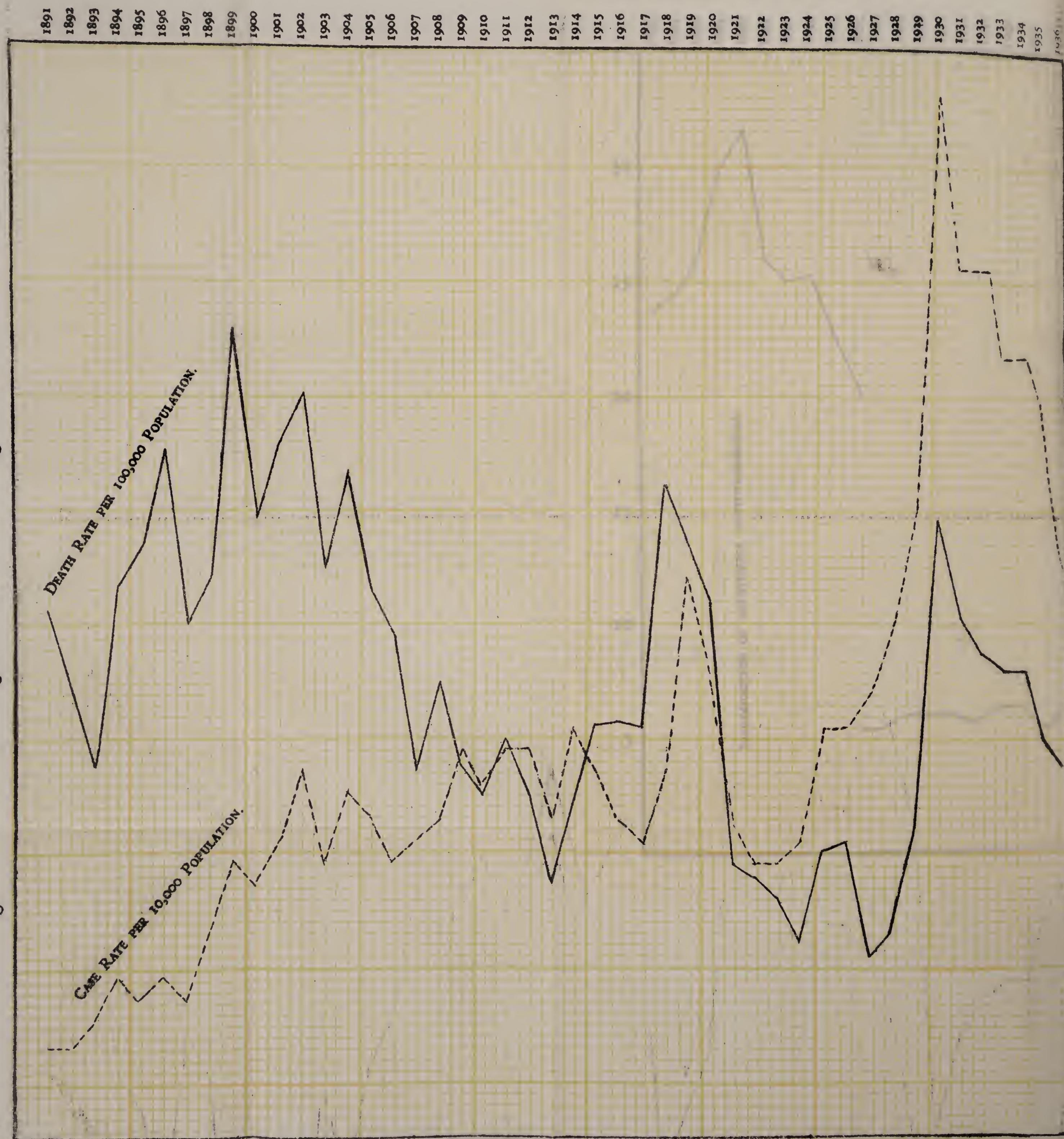
VERBROOK

THE DUNNINGTON FARM



# CITY OF LIVERPOOL.

DIPHTHERIA 1891-1936. CASE RATES PER 10,000 POPULATION AND DEATH RATES PER 100,000 POPULATION.



In Table XI are given the number of cases of diphtheria and of deaths from this disease during 1936, and also during nine previous years.

TABLE XI.

DIPHTHERIA—CASES AND DEATHS DURING 1936 AND NINE PREVIOUS YEARS.

	1927	1928	1929	1930	1931	1932	1933	1934	1935	1936
Cases ... ... ...	1,664	1,902	2,336	4,023	3,256	3,312	2,917	2,913	2,695	2,179
Case-rate per 1,000 population ... ...	1·9	2·2	2·7	4·6	3·8	3·8	3·4	3·4	3·1	2·5
Deaths ... ... ...	90	100	139	236	197	184	177	177	149	139
Death-rate per 100,000 population ...	10·5	11·5	15·9	26·8	23·0	21·3	20·4	20·4	17·2	16·0
Fatality rate per 100 cases ... ... ...	5·4	5·3	5·9	5·9	6·0	5·5	6·1	6·1	5·5	6·4

Prior to 1857 there were no records of the deaths from diphtheria, the heading croup presumably containing all the deaths from this disease; from 1858 onwards, however, the term diphtheria has steadily replaced croup as a certified cause of death.

The accompanying graphs show the decline in the fatality rate of this disease since 1892, and also the great rise in the annual number of cases during the same period of time.

In Table XII are given details relating to ages at death, ages of notified cases, and percentage fatality at various ages, etc.

TABLE XII.

## DEATHS FROM DIPHTHERIA.

DISTRICTS.	QUARTERS.								YEAR 1936			
	March.		June.		Sept.		Dec.		M.	F.	Total	
	M.	F.	M.	F.	M.	F.	M.	F.	M.	F.		
Exchange .....	1	—	1	—	1	—	3	—	6	—	6	
Abercromby .....	1	—	—	—	1	—	—	—	2	—	2	
St. Peter's .....	1	—	2	1	1	—	1	2	5	3	8	
Toxteth Park.....	6	2	7	—	—	—	1	8	1	21	4	25
Edge Hill & Sefton Park.....	1	1	—	2	1	1	3	5	5	9	14	
Wavertree .....	1	—	1	3	1	2	—	—	3	5	8	
Fazakerley .....	2	1	4	—	3	1	1	4	10	6	16	
Walton & Walton Park .....	2	2	—	—	1	1	1	3	4	6	10	
Kirkdale .....	2	—	—	1	—	1	3	2	5	4	9	
Netherfield .....	2	1	2	—	—	5	3	5	7	11	18	
Everton .....	—	1	—	—	1	2	—	3	1	6	7	
West Derby .....	—	—	1	1	—	—	7	7	8	8	16	
City .....	19	8	18	8	10	14	30	32	77	62	139	

## AGES AT DEATH.

Under 1 year.	1—	2—	3—	4—	5—	10—	15—	20—	30—	40—	50—	60—	All Ages
3	6	13	21	18	59	17	2	—	—	—	—	—	139

## AGES OF NOTIFIED CASES.

14	70	144	195	223	917	352	93	102	49	12	6	2	2179
72%							28%						

## PERCENTAGE FATALITY AT EACH AGE.

21.4	8.6	9.0	10.8	8.1	6.4	4.8	2.1	0.0	0.0	0.0	0.0	0.0	0.0
------	-----	-----	------	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----

N.B.—Deaths in public institutions are transferred to the districts from which the patients came.

It was in 1890 that diphtheria and membranous croup became notifiable. In 1895 treatment by antitoxin was introduced. Since that time there has been a steady reduction in the fatality-rate. Whereas in 1895, 31 patients out of every 100 died in Liverpool, the percentage fatality-rate now varies between 5 per cent. and 7 per cent. This favourable result is greatly helped by the admission to hospital of all patients willing to go. During 1936, 2,124 patients were admitted to hospital out of 2,179 cases notified, an admission rate of 97·5 per cent.

It was hoped at one time that extensive hospitalization and improvements in treatment would result in a material reduction in the number of cases occurring. This has not been so. On the contrary, in Liverpool, there has been a considerable rise in the number of cases and, since 1929, there has been an epidemic which has taxed the hospital accommodation severely and has given rise to considerable anxiety.

There is reason to believe that the way out of this dilemma lies in the extensive protection of children against diphtheria by means of inoculation. In later paragraphs (1) the steps which have been taken successfully in this direction are described.

### **Scarlet Fever.**

During 1936, 1,600 cases of scarlet fever were reported, a case-rate of 1·8 per 1,000 of the population. Of these cases, 2 proved fatal, making a fatality-rate of 0·1 per 100 cases, and a mortality-rate of 0.2 per 100,000 of the population.

In Table XIII are given the numbers of cases of scarlet fever and of deaths from this disease during 1936, in the various districts of Liverpool.

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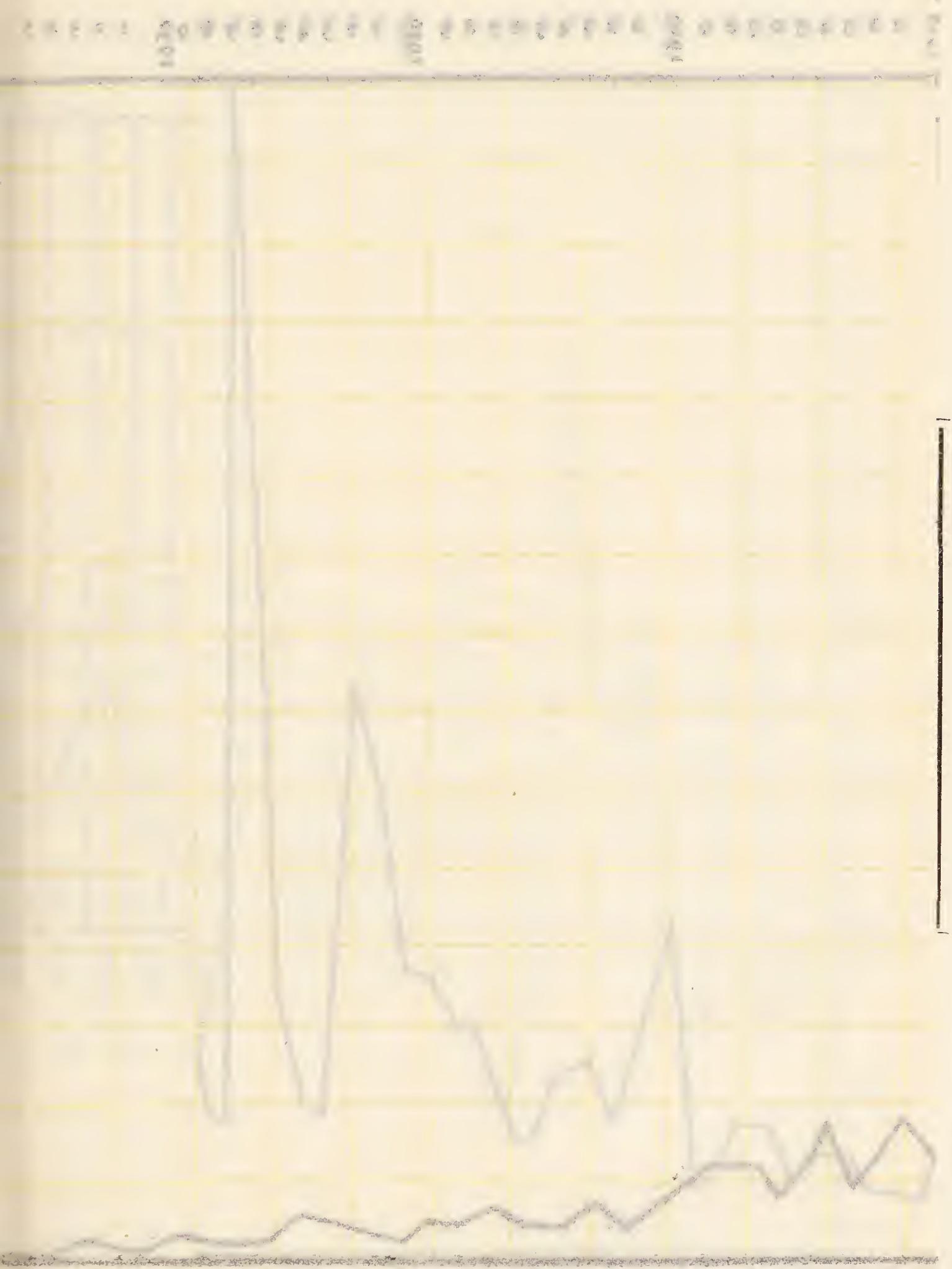
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TABLE XIII.  
SCARLET FEVER—CASES AND DEATHS DURING 1936.

District.	Estimated Population, 1936.	Cases.	Deaths.	Attack Rate per 1,000 population.	Death Rate per 100,000 population.	Case Fatality Rate %	Proportion of Secondary to Primary Cases.	PERCENTAGE.	
								Proportion of Children under 2 years of age to Total Cases.	Proportion of Children under 5 years of age to Total Cases.
1. Exchange .....	49,383	71	—	1.4	—	—	—	4.2	12.7
2. Abercromby .....	23,571	43	—	1.8	—	—	—	2.3	4.7
3. St. Peter's .....	52,372	66	—	1.3	—	—	—	7.6	7.6
4. Everton .....	30,074	66	1	2.2	3.3	1.5	6.1	6.1	39.4
5. Netherfield .....	73,234	155	—	2.1	—	—	5.8	3.9	30.3
6. Kirkdale .....	60,767	81	—	1.2	—	—	2.4	4.9	33.3
7. Edge Hill & Sefton Park	114,993	194	—	1.7	—	—	5.2	5.7	29.4
8. Toxteth Park .....	90,883	127	1	1.4	1.1	0.8	3.1	3.9	36.2
9. Walton & Walton Park	90,996	143	—	1.6	—	—	3.5	—	16.8
10. West Derby .....	108,541	245	—	2.3	—	—	—	4.9	4.5
11. Wavertree .....	102,308	178	—	1.7	—	—	—	6.2	3.4
12. Fazakerley .....	69,988	231	—	3.3	—	—	—	4.8	3.5
Central Districts (1 to 3).....	125,326	180	—	1.4	—	—	—	5.0	8.9
Middle Districts (4 to 9).....	460,947	766	2	1.7	0.4	0.3	4.4	4.4	29.6
Outer Districts (10 to 12).....	280,837	654	—	2.3	—	—	5.2	5.2	25.2
Whole City .....	867,110	1,600	2	1.8	0.2	0.1	4.8	4.4	28.9

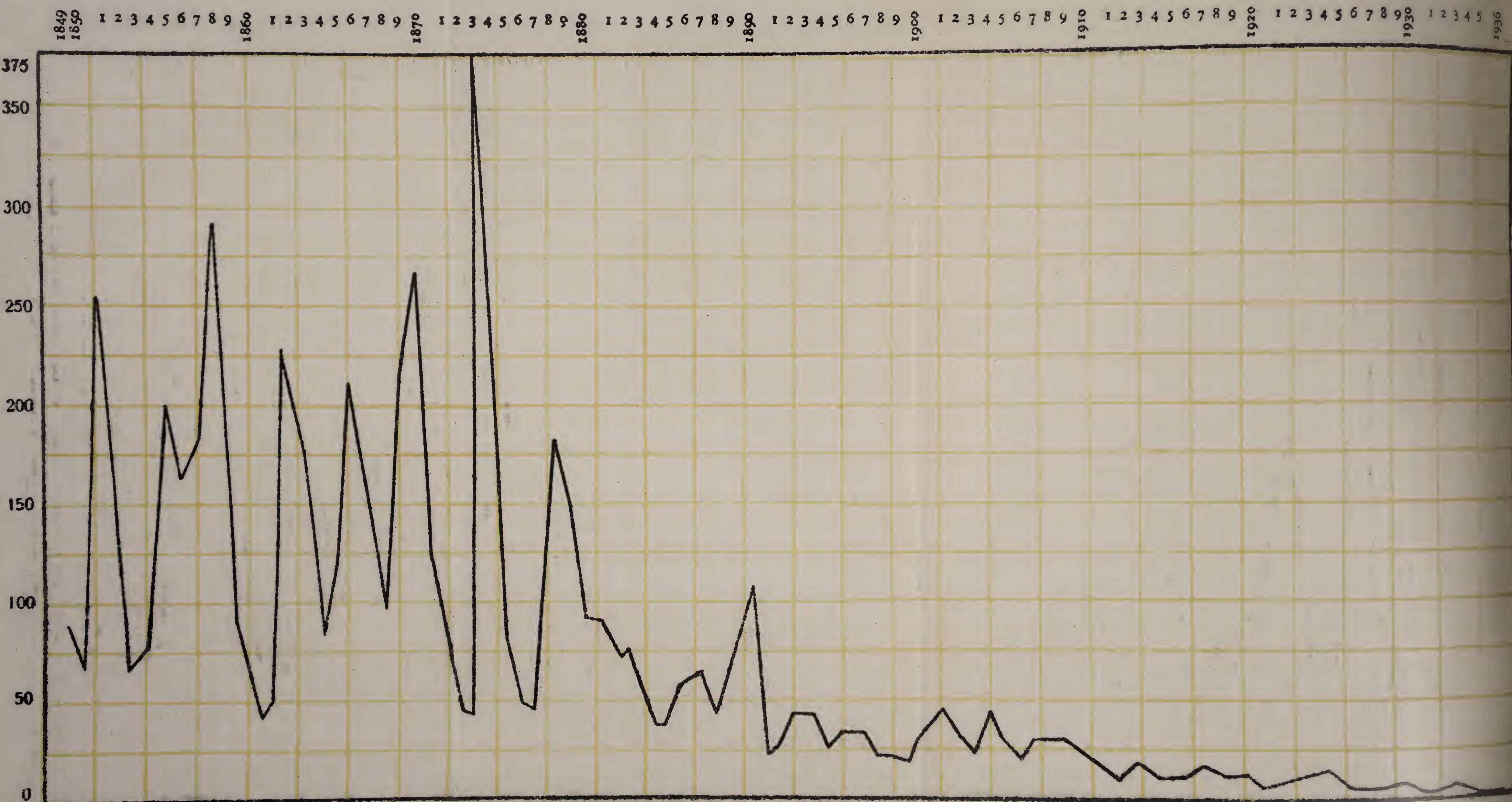
# CITY OF LIVERPOOL

Trade Survey 1870 with Actual Measurements

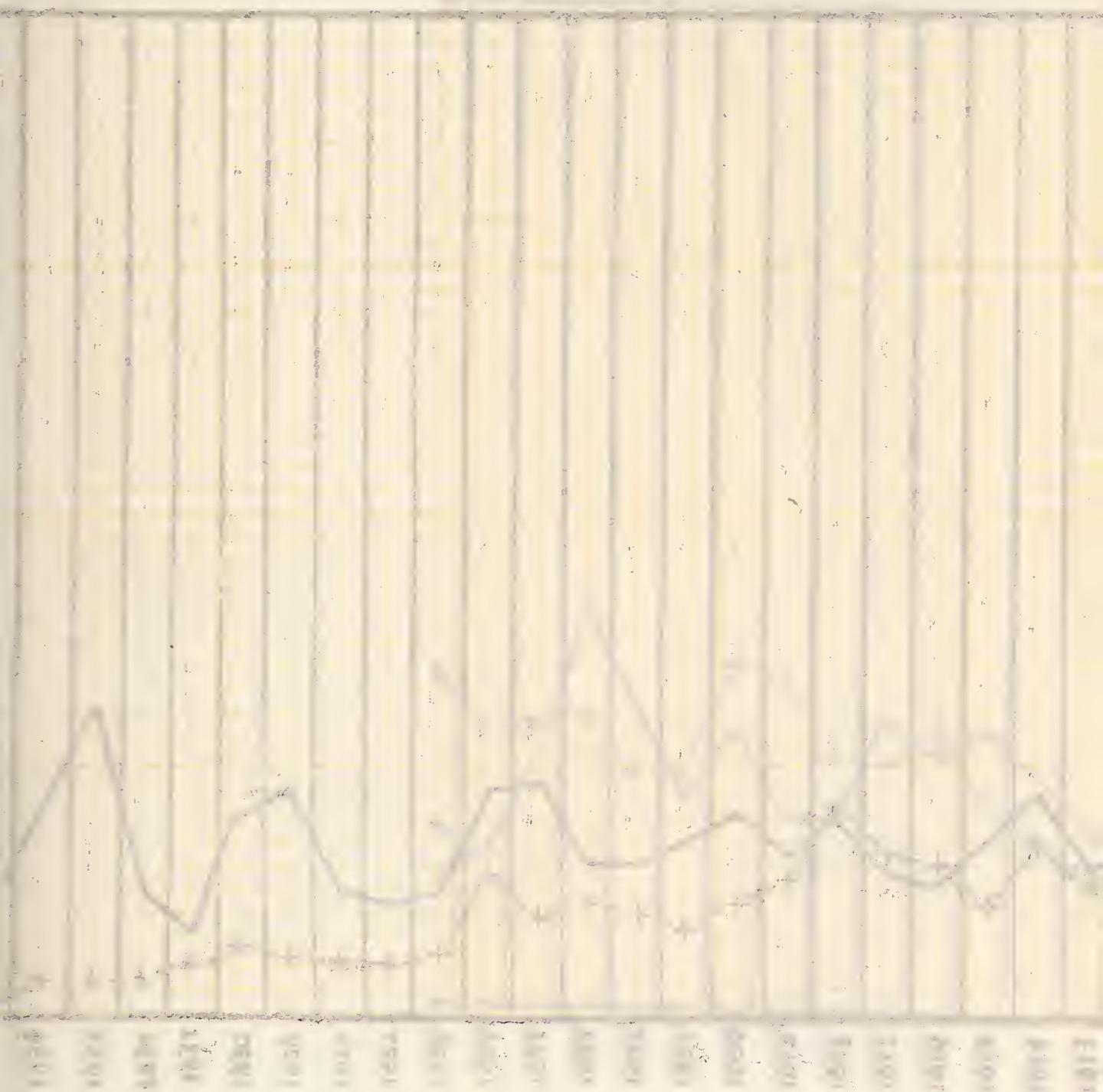


# CITY OF LIVERPOOL.

Scarlet Fever 1849-1936 Death Rates per 100,000 Population.

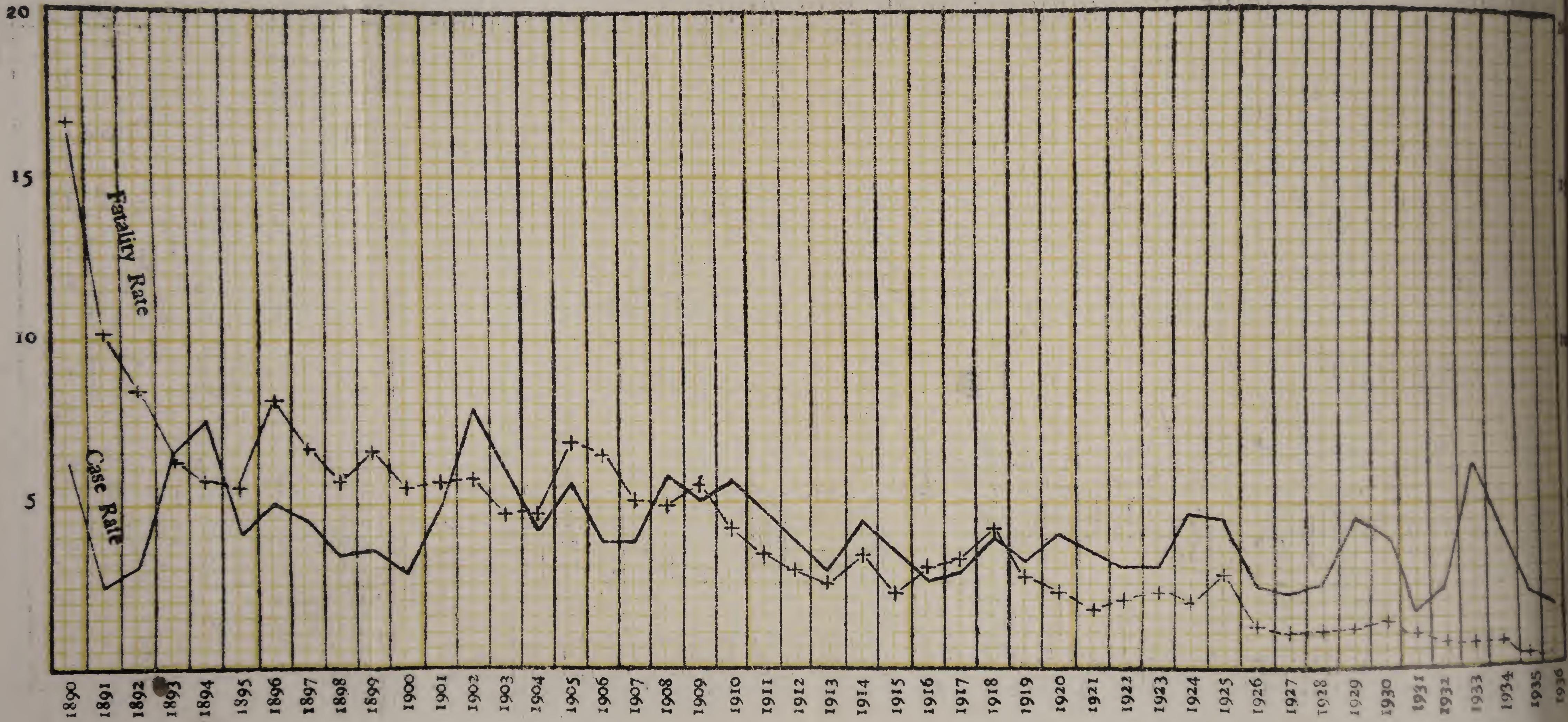


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# CITY OF LIVERPOOL.

Scarlet Fever 1890—1936 Case Rates per 1000 Population, and Fatality Rates per 100 Cases.



In Table XIV are given the numbers of cases of scarlet fever and of deaths from this disease during 1936 and also during nine previous years.

TABLE XIV.

SCARLET FEVER—CASES AND DEATHS DURING 1936 AND NINE PREVIOUS YEARS.

		1927	1928	1929	1930	1931	1932	1933	1934	1935	1936
Cases	...	1,640	2,193	3,989	3,069	1,407	1,925	5,286	3,574	1,900	1,600
Case-rate per 1,000 inhabitants	...	1·9	2·5	4·6	3·5	1·6	2·2	6·1	4·1	2·2	1·8
Deaths	...	12	19	41	35	11	11	27	19	6	2
Death-rate per 100,000 inhabitants	...	1·4	2·2	4·7	4·0	1·2	1·3	3·1	2·2	0·7	0·2
Fatality rate per 100 cases	...	0·7	0·9	1·0	1·1	0·8	0·6	0·5	0·5	0·3	0·1

In Table XV are given details relating to ages at death, ages of notified cases and percentage fatality at various ages, etc. :—

TABLE XV.  
DEATHS FROM SCARLET FEVER.

DISTRICTS.	QUARTERS.								YEAR.		
	March.		June.		Sept.		Dec.		1936.		
	M.	F.	M.	F.	M.	F.	M.	F.	M.	F.	Total
Exchange .....	...	...	...	...	...	...	...	...	...	...	...
Abercromby .....	...	...	...	...	...	...	...	...	...	...	...
St. Peter's .....	...	...	...	...	...	...	...	...	...	...	...
Toxteth Park .....	...	...	...	...	...	...	1	...	1	...	1
Edge Hill & Sefton Park ...	...	...	...	...	...	...	...	...	...	...	...
Wavertree .....	...	...	...	...	...	...	...	...	...	...	...
Fazakerley .....	...	...	...	...	...	...	...	...	...	...	...
Walton & Walton Park .....	...	...	...	...	...	...	...	...	...	...	...
Kirkdale .....	...	...	...	...	...	...	...	...	...	...	...
Netherfield .....	...	...	...	...	...	...	...	...	...	...	...
Everton .....	...	...	...	...	...	...	1	...	1	...	1
West Derby .....	...	...	...	...	...	...	...	...	...	...	...
City .....	...	...	...	...	...	...	2	...	2	...	2

## AGES AT DEATH.

Under 1 year.	1—	2—	3—	4—	5—	10—	15—	20—	30—	40—	50—	60—	All Ages.
...	...	...	1	...	...	...	1	...	...	...	...	...	2

## AGES OF NOTIFIED CASES.

10	61	108	131	153	755	216	69	61	26	7	3	...	1,600
28.9%				47.2%				13.5%				10.4%	

## PERCENTAGE FATALITY AT EACH AGE.

...	...	...	0.8	...	...	...	1.4	...	...	...	...	...	0.1
-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----

N.B.—Deaths in institutions are transferred to the districts from which the patients came.

The number of cases notified during the year, namely, 1,600, was considerably less than that of the previous year, when 1,900 cases were notified. The number admitted to hospital for treatment was 1,026, a figure which is 64 per cent. of the total number notified.

### Immunization against Diphtheria and Scarlet Fever.

The development of the scheme for inoculation against diphtheria and scarlet fever during the years 1925 to 1932 was described in the annual report for 1932. During 1933 to 1936 the work has been continued on similar lines, with the results for 1936 described in the tables which follow. It will facilitate description if inoculation against diphtheria and inoculation against scarlet fever are dealt with separately.

#### Inoculation against Diphtheria.

In Table XVI is given a numerical summary of the number of completed inoculations against diphtheria since 1925.

TABLE XVI.

NUMBER OF COMPLETED DIPHTHERIA INOCULATIONS.

Where or by whom inoculated.	1925	1926	1927	1928	1929	1930	1931	1932	1933	1934	1935	1936
ATION CLINICS:												
gic ... ...	...	...	...	...	...	68	366	572	333	422	405	367
end Avenue ...	...	...	...	...	...	...	...	381	340	354	368	305
Welfare Centres ...	...	...	...	...	...	...	...	...	...	...	198	452
Elementary ...	...	...	...	...	...	...	153	3904	3895	4917	4001	6251
ential ...	...	231	49	22	59	76	123	264	681	433	323	431
AL HOSPITALS:												
erley ... ...	...	...	...	...	31	116	493	635	1264	434	239	267
Hospitals—North, th and East ...	...	...	...	...	...	...	57	151	141	205	258	113
Hey ... ...	...	...	...	...	...	...	62	121	132	122	98	163
Mount ... ...	...	...	...	...	...	38	...	174	277	92	49	24
Municipal Hospitals ...	...	...	...	...	...	...	...	...	...	81	34	92
neous ... ...	16	98	55	90	93	171	190	272	173	38	15	5
Practitioners ...	...	...	...	...	...	15	99	173	135	123	128	78
TOTALS ... ...	16	329	104	112	183	484	1543	6647	7371	7221	6116	8548
											GRAND TOTAL ...	38,674

In addition to the 8,548 persons, each of whom during 1936 received three injections of diphtheria prophylactic, there were 546 persons who did not receive a full course of injections. In all probability these persons received from this incomplete treatment some degree of protection.

On two occasions the medical practitioners of Liverpool have been asked to avail themselves of the offer of diphtheria prophylactic provided free of charge by the Health Department, but the response has been very disappointing. During the year the work of private practitioners accounted for less than 1 per cent. of the total work accomplished, 78 persons treated out of a total of 8,548.

An analysis according to age of the persons who had completed a full immunization course is given in Table XVII.

TABLE XVIII.

Age at date of inoculation.	1925	1926	1927	1928	1929	1930	1931	1932	1933	1934	1935	1936
Under 1 year...	2	0	0	0	0	16	53	27	19	2	1	5
1 year ...	3	0	1	0	0	35	150	183	187	213	211	359
2 years ...	4	0	0	2	0	51	89	189	219	157	232	340
3 years ...	2	0	1	8	1	60	82	189	246	164	222	259
4 years ...	1	3	10	14	7	39	103	253	466	301	489	513
5 years ...	0	16	12	20	13	26	112	1,224	1,375	1,637	1,541	2297
6 years ...	0	15	9	22	44	13	94	1,405	1,583	1,999	1,563	2497
7 years ...	0	7	6	11	44	15	99	1,048	1,357	1,222	872	1211
8 years ...	1	23	9	11	14	18	81	585	519	489	216	304
9 years ...	0	24	5	9	9	21	86	351	266	157	100	75
10 years and over.	3	241	51	15	51	190	594	1,193	1,134	880	669	688
												Total 10 years of age and over at the end of 1936: 12,973

Total under 5 years of age at the end of 1936:  
2,747

Total 5-9 years of age at the end of 1936:  
22,954

It is the children under 10 years of age who are the more important, and the greater the number of persons of this age who are immunized the better. One of the practical difficulties in this work is that of securing the immunization of a high proportion of infants under 5 years of age. Clearly, it is more valuable to the community to protect very young children than it is to protect older ones, having regard to the fact that children, as they grow older, tend to become immune as the result of repeated sub-infections, and also in view of the high fatality rates from diphtheria among children under 5 years of age shown in Table XII.

THE OCCURRENCE OF DIPHTHERIA IN INOCULATED PERSONS.

In Table XVIII are given the comparative case-rates during the four years ending 1936 among inoculated and non-inoculated persons.

TABLE A.V.I.I.

DIPHTHERIA—COMPARATIVE CASE-RATES DURING 1933/36 AMONG INOCULATED AND NON-INOCULATED PERSONS IN LIVERPOOL.

Not Inoculated.		Inoculated.		F.T.	
Age.	Cases of diphtheria in non-inoculated persons during 1933/36.	T.A.F.	M.T. Toxoid.	Inoculated population at risk during 3 years 1933/35.	Cases of diphtheria during 1934/6.
Under 1	69,175	1·34	37	0	Nil
1 +	66,595	5·06	483	0	Nil
2 +	64,511	10·09	896	0	Nil
3 +	63,644	13·35	1,218	1	0·82
4 +	62,183	15·70	1,833	1	0·54
5 +	58,115	20·84	5,197	2	0·38
6 +	54,225	1081	19·93	10	0·96
7 +	54,420	745	13·69	11,397	33
8 +	58,674	588	10·02	8,664	29
9 +	64,934	533	8·21	5,470	16
Total under 10	616,476	7,065	11·46	45,590	92
10 +	2,769,427	3,466	1·25	14,593	26
				1·78	6,902
				14	2·51
				5,582	3,826
				9	5
				1·30	0
				0	Nil

Schick tests performed during the year numbered 372, of which 85 were positive.

### Inoculation against Scarlet Fever.

A numerical description of the number of persons inoculated against scarlet fever since 1927, the year in which this work commenced, is given in Table XIX, below.

TABLE XIX.

NUMBER OF COMPLETED SCARLET FEVER INOCULATIONS.

Where or by whom inoculated.	1927	1928	1929	1930	1931	1932	1933	1934	1935	19
<b>INOCULATION CLINICS :</b>										
Carnegie ... ... ...	—	—	—	60	352	508	303	366	332	28
Townsend Avenue ...	—	—	—	—	—	395	323	313	315	24
<b>MUNICIPAL HOSPITALS :</b>										
Fazakerley ... ... ...	—	—	—	—	165	197	121	120	99	12
Fever Hospitals—North, South and East ...	—	—	—	—	15	57	7	10	16	7
Alder Hey ... ... ...	—	—	—	—	36	111	132	143	98	10
Olive Mount ... ... ...	—	—	—	—	—	11	34	61	33	—
Other Hospitals ... ... ...	—	—	—	—	—	—	—	—	—	29
RESIDENTIAL SCHOOLS ...	61	18	28	31	26	218	465	478	202	2
MISCELLANEOUS ... ... ...	—	65	195	9	178	191	74	45	—	—
MEDICAL PRACTITIONERS ...	—	—	—	15	75	129	105	94	93	—
<b>TOTALS</b> ...	<b>61</b>	<b>83</b>	<b>223</b>	<b>115</b>	<b>847</b>	<b>1,817</b>	<b>1,564</b>	<b>1,630</b>	<b>1,217</b>	<b>1,</b>

GRAND TOTAL ... 8,812

The present scale of doses is 500, 2,000, 10,000 and 40,000 skin test doses at weekly or fortnightly intervals, usually combined with simultaneous inoculations against diphtheria.

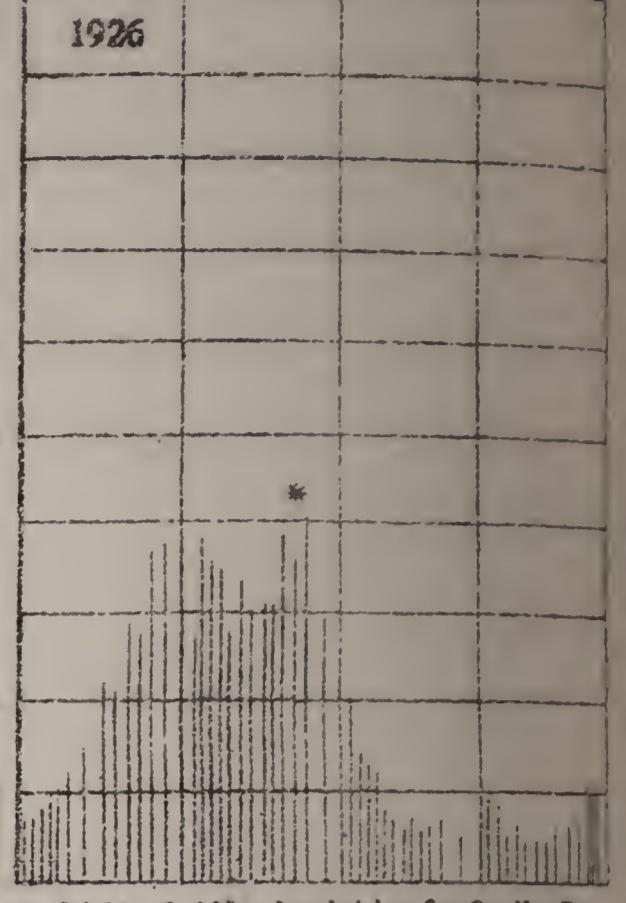
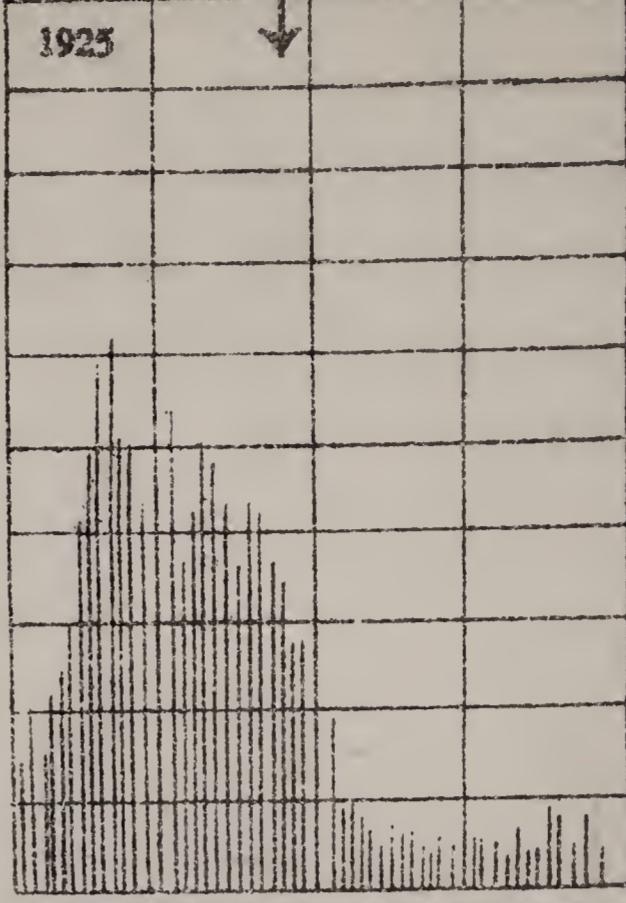
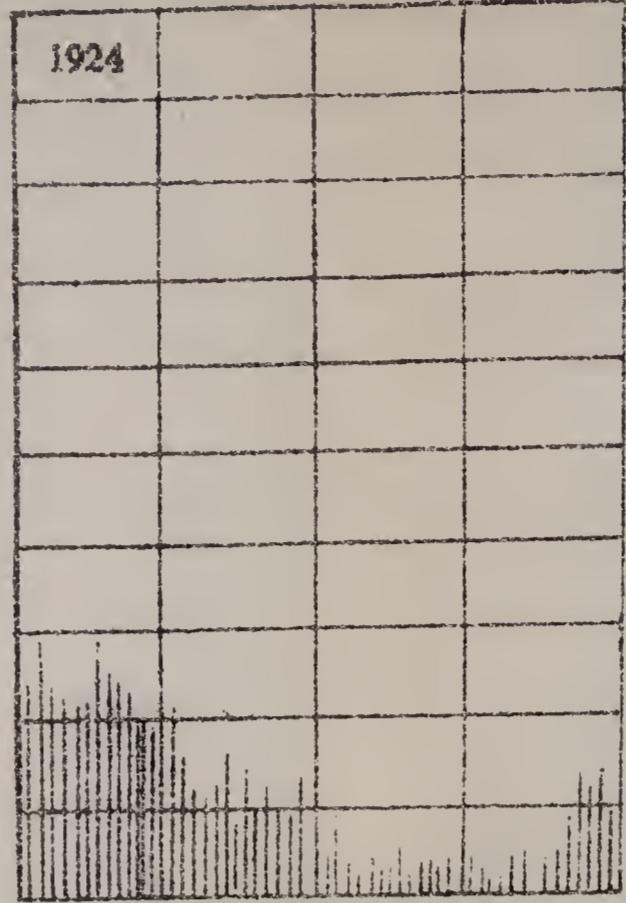
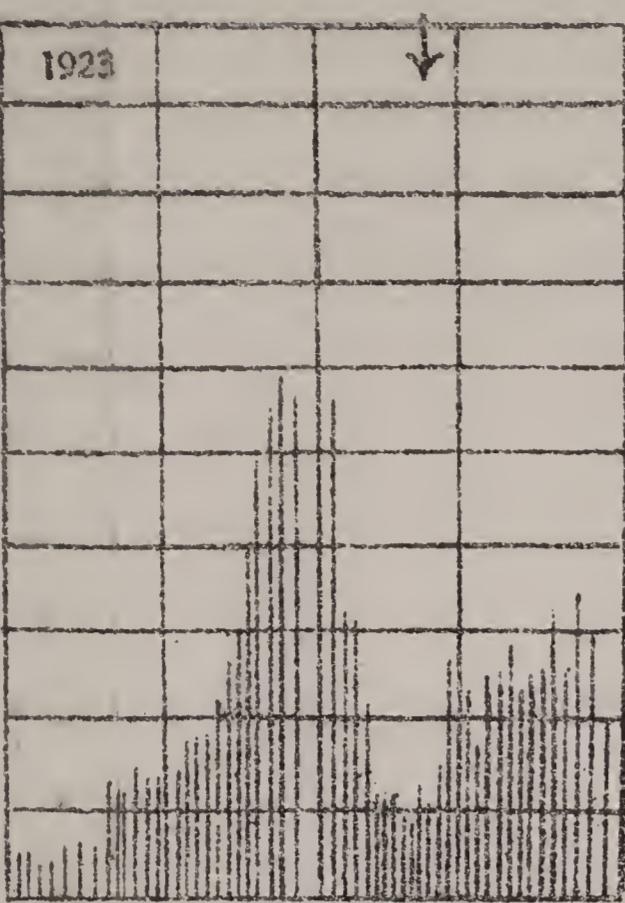
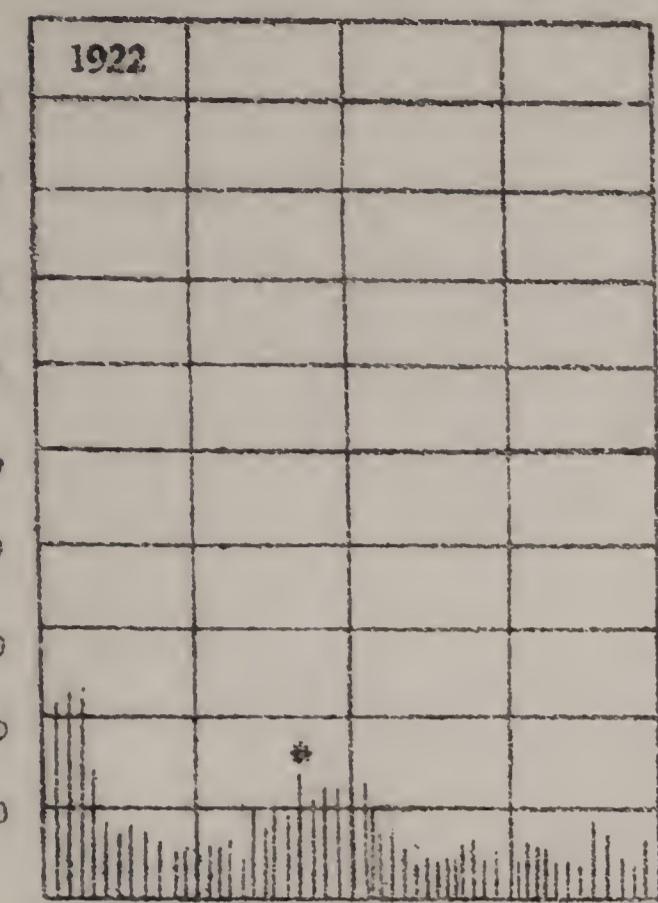
During the year 115 Dick tests were carried out, of which 27 were positive.



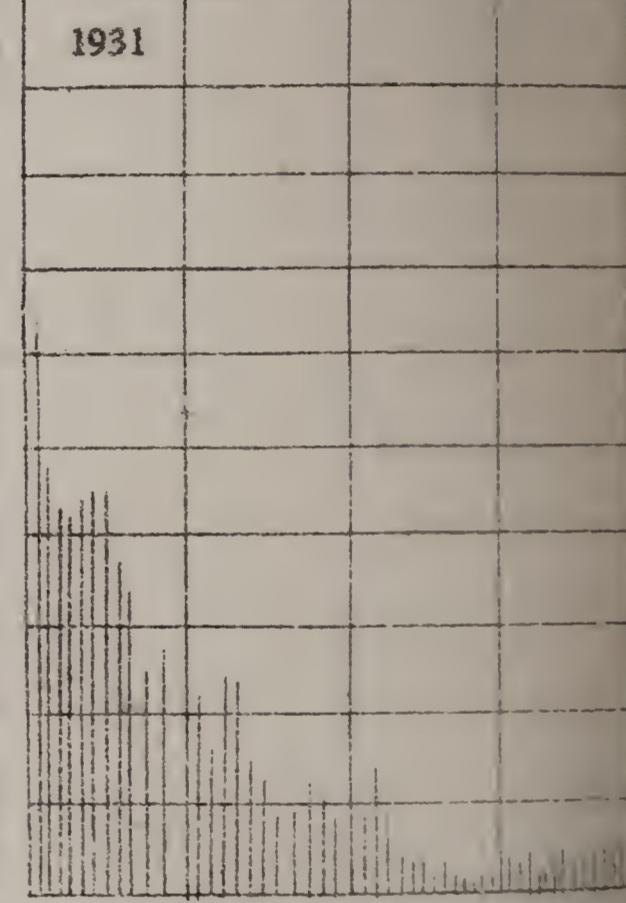
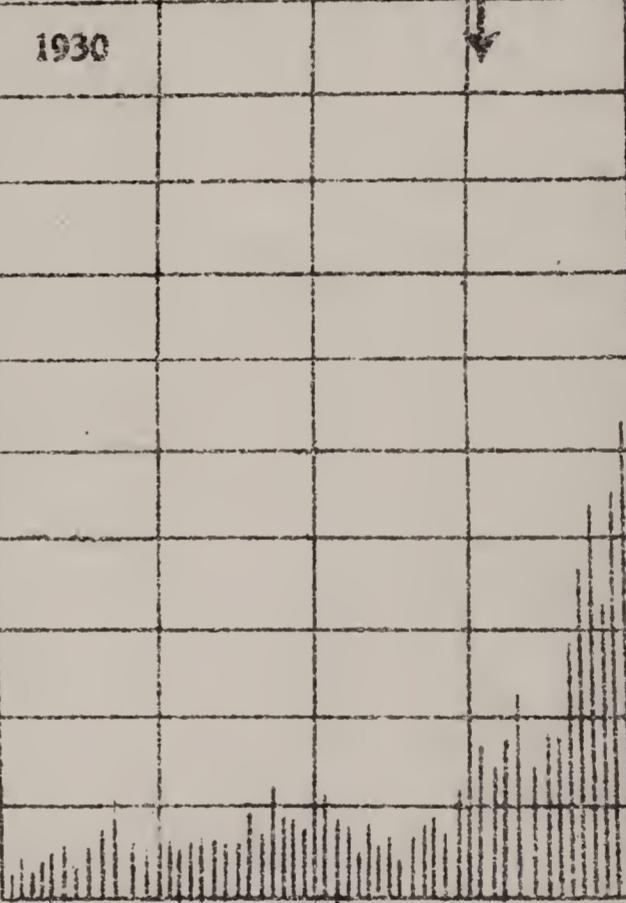
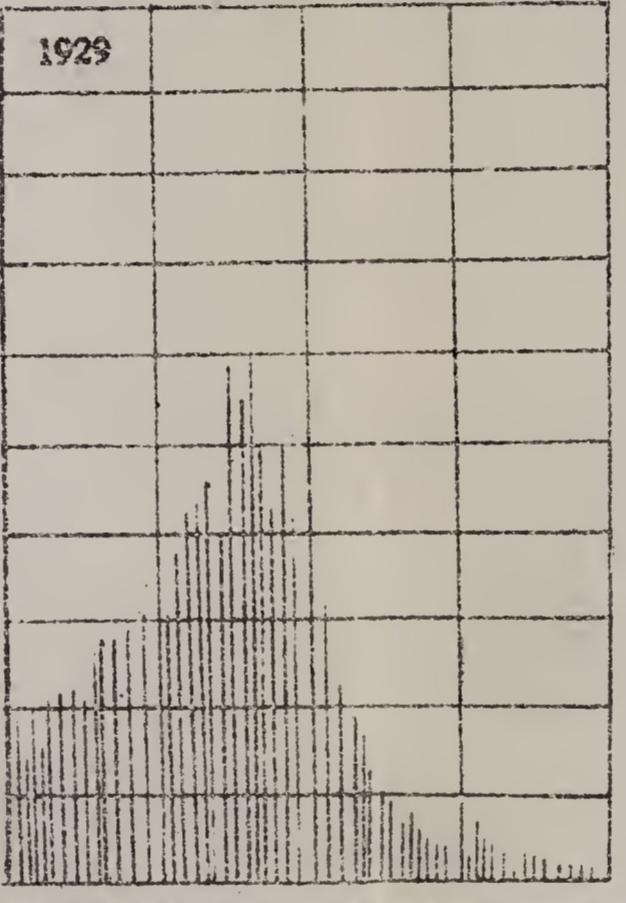
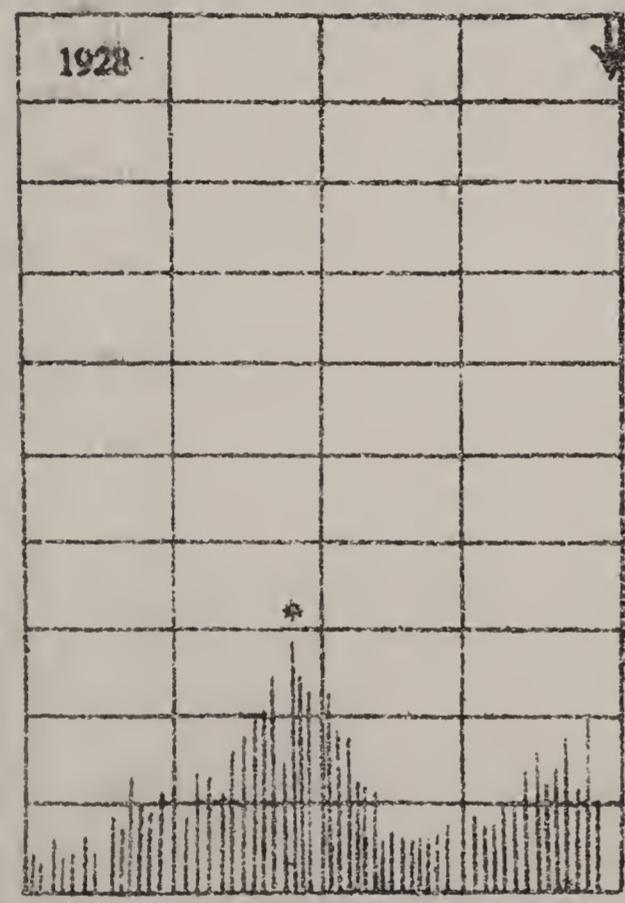
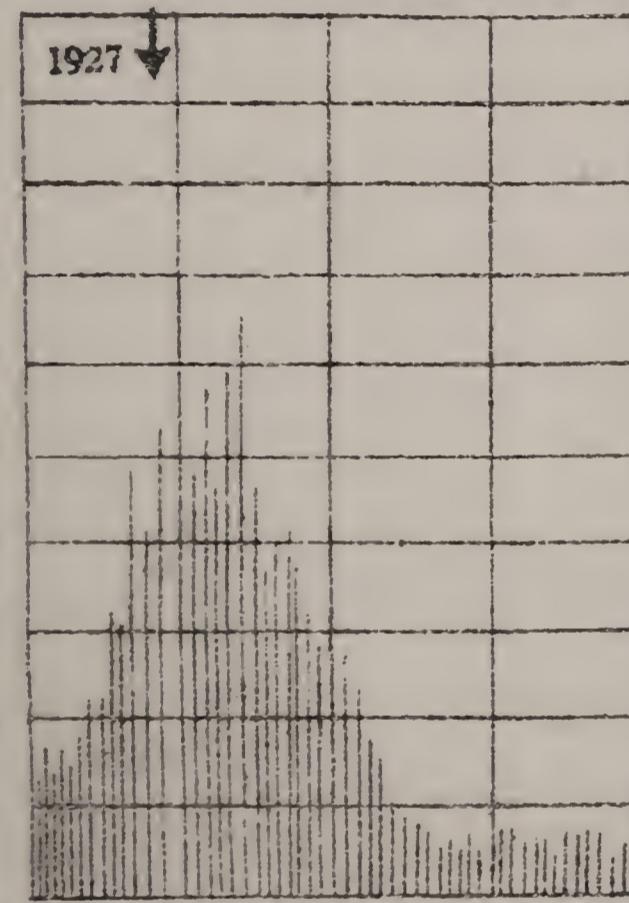
# CITY OF LIVERPOOL.

Cases of Measles during the years 1922 to 1936

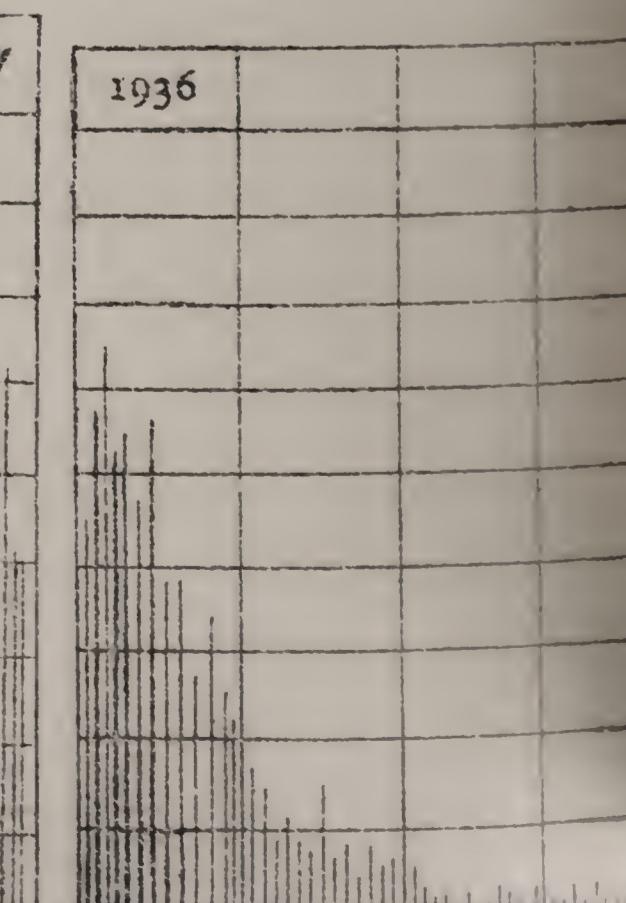
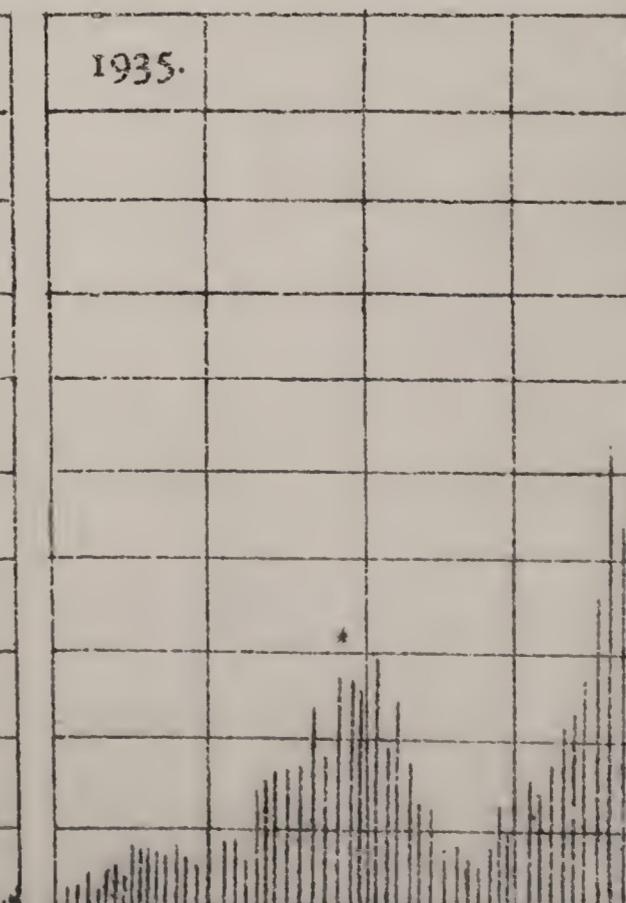
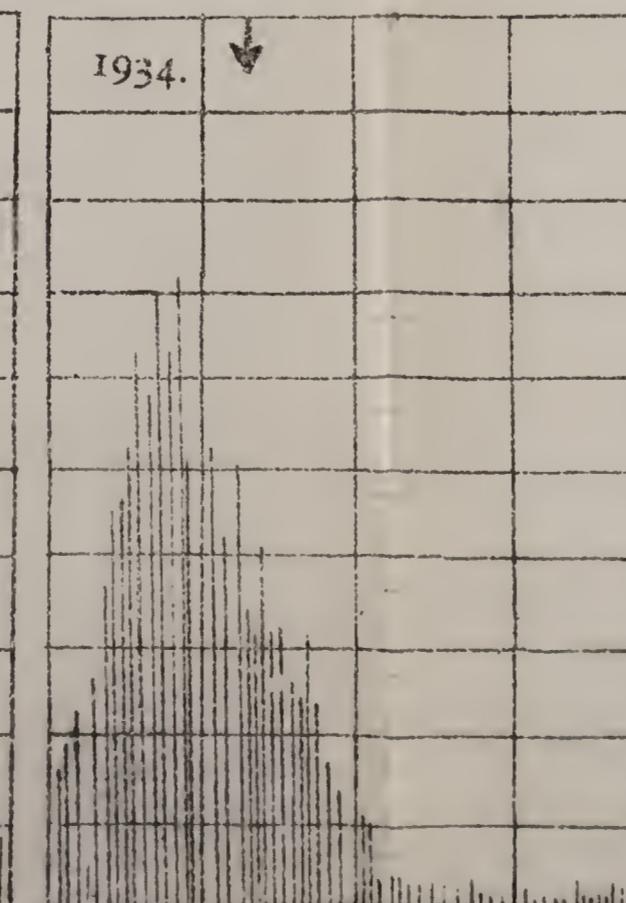
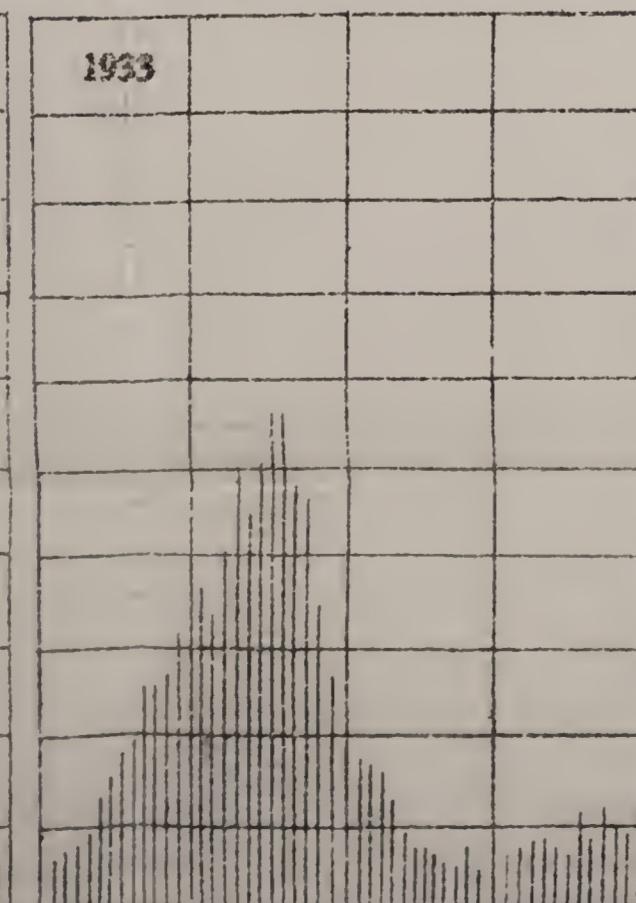
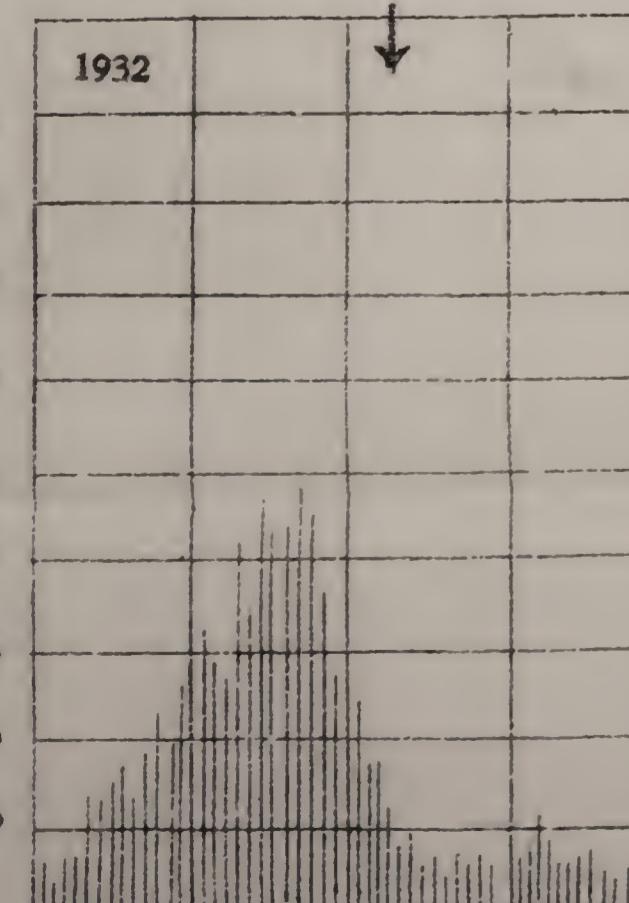
The arrows show recurring intervals of 92 weeks. The asterisks indicate the normal seasonal rise in the second quarter of the year.



Jan Feb Mar Apr May Jun Jul Aug Sep Oct Nov Dec Jan Feb Mar Apr May Jun Jul Aug Sep Oct Nov Dec Jan Feb Mar Apr May Jun Jul Aug Sep Oct Nov Dec Jan Feb Mar Apr May Jun Jul Aug Sep Oct Nov Dec



Jan Feb Mar Apr May Jun Jul Aug Sep Oct Nov Dec Jan Feb Mar Apr May Jun Jul Aug Sep Oct Nov Dec Jan Feb Mar Apr May Jun Jul Aug Sep Oct Nov Dec Jan Feb Mar Apr May Jun Jul Aug Sep Oct Nov Dec



Jan Feb Mar Apr May Jun Jul Aug Sep Oct Nov Dec Jan Feb Mar Apr May Jun Jul Aug Sep Oct Nov Dec Jan Feb Mar Apr May Jun Jul Aug Sep Oct Nov Dec Jan Feb Mar Apr May Jun Jul Aug Sep Oct Nov Dec

### Measles.

In Liverpool, measles is a disease notified on a voluntary basis. During 1936, 7,240 cases were reported, 5,874 by notification from medical practitioners and 1,366 from schools, etc. The total number represents a case rate of 8·35 per 1,000 of the population. The number of deaths was 176, making a fatality rate of 2·4 per 100 cases and a mortality-rate of 20·3 per 100,000 of the population.

In Table XX are given the numbers of cases of measles and of deaths from this disease during 1936, and also during nine previous years.

TABLE XX.

MEASLES—CASES AND DEATHS DURING 1936 AND NINE PREVIOUS YEARS.

	1927.	1928.	1929.	1930.	1931.	1932.	1933.	1934.	1935.	1936.
Cases ... ... ...	10,606	6,025	10,546	5,966	7,572	8,816	10,004	11,055	8,907	7,240
Case rate per 1,000 inhabitants ... ...	12·4	6·96	13·19	6·78	8·84	10·23	11·55	12·76	10·27	8·35
Deaths ... ... ...	345	177	427	170	369	312	299	229	154	176
Death rate per 100,000 inhabitants ... ...	40·3	20·4	50·1	19·3	43·1	36·2	34·5	26·4	17·8	20·3
Fatality rate per 100 cases ... ...	3·2	2·9	4·0	2·8	4·9	3·5	3·0	2·0	1·7	2·4

In Table XXI are given details relating to ages at death, ages of cases and percentage fatality at various ages, etc.

TABLE XXI.

## DEATHS FROM MEASLES.

DISTRICTS.	QUARTERS.								YEAR 1936.	Death Rates per 100,000 Popula- tion.		
	March		June.		Sept.		Dec.					
	M.	F.	M.	F.	M.	F.	M.	F.				
Exchange .....	9	2	3	4	...	...	...	...	12	6	18	36·0
Abercromby .....	5	...	...	1	...	...	...	...	5	1	6	25·5
St. Peter's .....	5	11	...	1	...	...	...	...	5	12	17	32·5
Toxteth Park.....	7	4	2	1	1	...	...	...	10	5	15	16·5
Edge Hill & Sefton Park	8	6	2	...	...	...	...	...	10	6	16	13·9
Wavertree .....	4	6	1	2	...	...	...	...	5	8	13	12·7
Fazakerley .....	6	10	...	...	...	...	...	...	6	10	16	22·9
Walton & Walton Park	4	4	2	2	...	...	...	...	6	6	12	13·2
Kirkdale .....	6	5	2	1	...	...	...	...	8	6	14	23·0
Netherfield .....	9	9	1	4	...	...	...	...	10	13	23	31·4
Everton .....	9	1	3	1	...	...	...	...	12	2	14	46·5
West Derby .....	6	3	1	2	...	...	...	...	7	5	12	11·1
City .....	78	61	17	19	1	...	...	...	96	80	176	20·3

## AGES AT DEATH

Under 1 year.	1—	2—	3—	4—	5—	10—	15—	20—	30—	40—	50—	60—	All Ages.
52	76	23	12	5	8	...	...	...	...	...	...	...	176

## AGES OF CASES.

608	936	866	834	948	2690	254	104	7240
-----	-----	-----	-----	-----	------	-----	-----	------

## PERCENTAGE FATALITY AT EACH AGE.

8·5	8·1	2·6	1·4	0·5	0·3	...	...	2·4
-----	-----	-----	-----	-----	-----	-----	-----	-----

N.B.—Deaths in public institutions are transferred to the districts from which the patients came.

The mortality in measles depends mainly upon the age at which infection occurs. As shown in Table XXI, 151 out of 176 deaths were in children under 3 years of age.

An Order of the Ministry of Health authorises local authorities to provide medical assistance including nursing for the poorer inhabitants of their district, and two nurses of the Health Visitors' Staff are engaged on this work, assisted by other members of the staff as occasion requires. In consequence of the visits of these nurses, many children have benefited from the assistance and advice given, and in some instances children have been removed for hospital treatment who would otherwise have been left at home without adequate care or attention. The visits, etc., made by these nurses in the course of 1936 were as follows:—

New cases visited during the year	...	...	7,251
Cases nursed	„	„	740
Re-visits to cases	„	„	4,115

During 1936, 712 patients were admitted to hospital out of the 7,240 which came to the notice of the Health Department, an admission rate of 9·8 per cent.

### **Whooping Cough.**

As whooping cough is not compulsorily notifiable, caution is necessary in drawing conclusions from the figures relating to cases and fatality-rates. During 1936, 931 cases came to the notice of the Health Department, a figure representing a case-rate of 1·07 per 1,000 of the population. Of these cases 105 proved fatal, corresponding to a death-rate of 12·1 per 100,000 of the population.

In Table XXII are given the numbers of cases of whooping cough and deaths from this disease during 1936 and also during nine previous years.

TABLE XXII.

WHOOPING COUGH—CASES AND DEATHS DURING 1936 AND  
NINE PREVIOUS YEARS.

Years.	1927	1928	1929	1930	1931	1932	1933	1934	1935	1936
Cases ... ...	1988	2313	1876	1147	2267	1596	987	2437	1044	931
Deaths ... ...	125	269	198	75	189	148	93	172	62	105
Death rate per 100,000 of the population ...	14·4	31·2	22·8	8·5	22·1	17·2	10·7	19·9	7·1	12·1
Percentage of deaths to cases ...	6·3	11·6	10·5	5·5	8·3	9·3	9·4	7·0	5·9	11·3

Whooping cough is extremely fatal in the first two or three years of life and it is of the greatest importance that children of tender years be protected from possible sources of infection.

The considerable decline in the mortality from whooping cough during the last 87 years is shown in Table XXIII.

TABLE XXIII.

WHOOPING COUGH—AVERAGE DEATH-RATE PER 100,000 INHABITANTS  
FROM 1850 TO 1936.

Year.	Average death-rate per 100,000.
1850-59 ... ... ... ... ... ... ...	103·6
1860-69 ... ... ... ... ... ... ...	107·3
1870-79 ... ... ... ... ... ... ...	86·8
1880-89 ... ... ... ... ... ... ...	72·9
1890-99 ... ... ... ... ... ... ...	56·3
1900-09 ... ... ... ... ... ... ...	45·0
1910-19 ... ... ... ... ... ... ...	32·6
1920-29 ... ... ... ... ... ... ...	23·4
1930 ... ... ... ... ... ... ...	8·5
1931 ... ... ... ... ... ... ...	22·1
1932 ... ... ... ... ... ... ...	17·2
1933 ... ... ... ... ... ... ...	10·7
1934 ... ... ... ... ... ... ...	19·9
1935 ... ... ... ... ... ... ...	7·1
1936 ... ... ... ... ... ... ...	12·1

Table XXIV shows the deaths divided by ages and by the districts of residence. It will be noted that the deaths are mainly in very young children, and that high rates of mortality from whooping cough are still experienced in the central districts of the city.

TABLE XXIV.

DEATHS FROM WHOOPING COUGH, 1936.

Districts.	At Ages						All ages.	Death Rates per 100,000 population.
	Under 1 yr.	1+	2+	3+	4+	5+		
1. Exchange ... ...	11	3	3	1	—	—	18	36·4
2. Abercromby ... ...	—	2	1	—	1	—	4	17·0
3. St. Peter's ... ...	3	2	1	1	—	—	7	13·4
4. Everton ... ...	1	7	1	—	—	—	9	29·9
5. Netherfield ... ...	6	5	4	3	—	—	18	24·6
6. Kirkdale ... ...	3	3	—	—	1	—	7	11·5
7. Edge Hill & Sefton Park	2	3	1	2	—	—	8	6·9
8. Toxteth Park ... ...	2	3	1	—	—	—	6	6·6
9. Walton & Walton Park	3	2	—	—	—	—	5	5·5
10. West Derby ... ...	5	5	—	—	1	—	11	10·1
11. Wavertree ... ...	2	2	—	—	1	—	4	3·9
12. Fazakerley ... ...	2	5	1	—	—	—	8	11·4
Central Districts (1 to 3)	14	7	5	2	1	—	29	23·1
Middle Districts (4 to 9)	17	23	7	5	1	—	53	11·3
Outer Districts (10 to 12)	9	12	1	—	1	—	23	8·2
Whole City ... ...	40	42	13	7	3	—	105	12·1

From Table XXV it will be observed that there has been a considerable variation in the age distribution of the deaths in the sixty-five years under review. In 1871 there was a high proportion—45 per cent. of the total in the first year of life, but there were no deaths at ages 5 years and upwards. For the next 20 years there was a higher proportion in the third year of life, but subsequently the proportion has tended to be higher in the first two years of life; in 1932, for example, 90 per cent. of the deaths occurred in these two years.

TABLE XXV.

DEATHS FROM WHOOPING COUGH AT THE VARIOUS AGES FOR THE YEARS  
1871, 1881, 1891, 1901 and 1911, and 1921-1936.

	Number of Deaths at the various Age Periods.							Total Deaths all ages.	Deaths expressed as a Percentage of Total Deaths.				
	under 1 year.	1+	2+	3+	4+	5+	10+		under 1 year.	1+	2+	3+	4+
1871	234	163	110	11	1	0	0	519	45	32	21	2	0
1881	135	130	120	17	0	0	0	402	34	32	30	4	0
1891	163	123	129	23	0	0	0	438	37	28	30	5	0
1901	63	58	20	15	2	8	0	166	38	35	12	9	1
1911	88	96	28	20	9	5	0	246	36	39	11	8	4
1921	68	98	19	15	3	7	0	210	32	47	9	7	2
1922	79	65	23	8	2	5	0	182	43	36	13	4	1
1923	68	56	15	8	6	3	0	156	44	36	9	5	4
1924	69	70	16	7	5	2	0	169	41	41	10	4	3
1925	82	88	21	22	8	6	0	227	36	39	9	9	4
1926	77	68	23	9	7	4	0	188	41	36	12	5	4
1927	47	43	18	8	6	3	0	125	38	35	14	6	5
1928	108	105	37	11	8	0	0	269	40	39	14	4	3
1929	78	72	22	9	7	9	1	198	39	37	11	5	3
1930	36	25	11	2	0	1	0	75	48	33	15	3	0
Average, 1921/30	...	71	69	20	11	5	4	180	40	38	12	5	3
1931	92	54	22	7	4	10	0	189	49	28	12	4	2
1932	73	61	7	5	1	1	0	148	49	41	5	3	1
1933	39	37	6	7	3	1	0	93	42	40	6	8	3
1934	59	67	29	10	3	4	0	172	34	39	17	6	2
1935	27	19	6	7	2	1	0	62	43	31	10	11	3
Average, 1931/35	...	58	48	14	7	3	3	0	133	44	36	10	6
1936	40	42	13	7	3	0	0	105	38	40	12	7	3

### Cerebro-Spinal Fever.

Ninety-four cases of cerebro-spinal fever occurred during 1936, of which 55 (or 58·5 per cent.) proved fatal, making a death-rate of 6·3 per 100,000 of the population. Eighty-two (or 87 per cent.) of the cases were confirmed bacteriologically, and, in the remainder, there was clinical or post-mortem evidence of this disease.

In Table XXVI are given the numbers of cases of cerebro-spinal fever and of deaths from this disease during 1936, and also during nine previous years.

TABLE XXVI.

CEREBRO-SPINAL FEVER—CASES AND DEATHS DURING 1936 AND NINE PREVIOUS YEARS.

	1927	1928	1929	1930	1931	1932	1933	1934	1935	1936
Cases ... ... ...	25	21	23	21	57	76	64	69	69	94
Deaths ... ... ...	21	16	21	17	47	47	45	37	33	55
Fatality-rate per 100 cases ... ... ...	84·0	76·2	91·3	81·0	82·4	61·8	70·3	53·6	48·1	58·5

Details of the results of treatment of cases of cerebro-spinal fever are given in the sectional report on hospital administration.

### Encephalitis Lethargica.

During 1936, 23 cases of encephalitis lethargica were notified to the Health Department for the first time. Of these cases one was suffering from the disease in an acute stage and in 22 the illness had passed the acute stage and become chronic. There were certified 14 deaths from encephalitis lethargica, all of which occurred among the chronic cases.

In Table XXVII are given the numbers of cases of encephalitis lethargica and of deaths from this disease during 1936 and also during nine previous years.

TABLE XXVII.

ENCEPHALITIS LETHARGICA—CASES AND DEATHS DURING 1936 AND  
NINE PREVIOUS YEARS.

		1927	1928	1929	1930	1931	1932	1933	1934	1935	1936
CASES:											
Acute	...	...	69	54	28	27	35	4	4	7	2
Chronic	...	...						17	26	23	22
DEATHS in											
Acute cases	...	...	25	24	26	18	26	2	1	4	0
Chronic cases	...	...						13	20	9	22
Fatality-rate per											
100 acute cases	...	—	—	—	—	—	—	50·0	25·0	57·1	—

### Acute Anterior Poliomyelitis (Infantile Paralysis.)

During 1936, 15 cases of poliomyelitis were notified, one of which proved fatal. The cases were distributed through the year as follows: July 1 case, August 2 cases, September 5 cases, October 5 cases, November 1 case, December 1 case. The notification of cases of poliomyelitis is undoubtedly very incomplete owing to the difficulties in diagnosis in respect of cases which do not proceed to the paralytic stage.

In Table XXVIII are given the numbers of cases of poliomyelitis and of deaths from this disease during 1936, and also during nine previous years.

TABLE XXVIII.

ACUTE POLIOMYELITIS—CASES AND DEATHS DURING 1936 AND  
NINE PREVIOUS YEARS.

		1927	1928	1929	1930	1931	1932	1933	1934	1935	1936
Cases	...	...	15	6	23	14	7	25	10	9	3
Deaths	...	...	2	5	10	6	4	11	3	3	0
Percentage of deaths to notified cases	...	13·3	83·3	43·5	42·8	57·1	44·0	30·0	33·3	—	6·7

### Influenza and other Respiratory Diseases.

The mortality from respiratory diseases varies greatly from year to year being influenced by weather conditions and also by the prevalence of such diseases as influenza, measles and whooping cough.

In Table XXIX are given the average annual number of deaths due to respiratory diseases from 1871 to 1936, the percentage proportion of respiratory deaths to all deaths, the respiratory death-rate per 1,000 of the population and, finally, a comparison of the respiratory death-rate since 1880 with the average rate experienced in 1871-80 which has been called 100.

TABLE XXIX.

DEATHS FROM RESPIRATORY DISEASES (INCLUDING INFLUENZA).

	Yearly average number of deaths.	Percentage proportion to all deaths.	Respiratory death-rate per 1,000 population.	Death-rates compared with the 1871-80 death-rate called 100.
1871-80 ...	2,976	20·2	5·7	100
1881-90 ...	3,251	23·2	5·9	104
1891-1900 ...	3,582	24·6	5·9	104
1901-10 ...	3,299	21·8	4·5	79
1911-20 ...	3,648	27·3	4·7	83
1921-30 ...	2,904	24·7	3·5	61·4
1931... ...	2,397	19·6	2·8	49·1
1932... ...	1,905	16·7	2·2	38·6
1933... ...	2,466	19·8	2·8	49·1
1934... ...	1,792	15·8	2·1	36·8
1935... ...	1,879	16·4	2·2	38·6
1936... ...	1,489	13·3	1·7	29·6

There has been a striking decline of the respiratory death-rate to a figure which is only 29·6 per cent. of the rate which prevailed during the years 1871-80.

In Table XXX are shown the number of deaths from all causes, the number of deaths from influenza, pneumonia and bronchitis, and the total number of respiratory deaths which occurred week by week during 1936. These figures do not include the deaths of Liverpool residents which occurred outside the city.

TABLE XXX.

WEEKLY DEATHS FROM RESPIRATORY DISEASES (INCLUDING INFLUENZA).

1936. Week ended.	Total Deaths (all causes).	Weekly Death- rate per 1,000 of Estimated Population.	NUMBER OF DEATHS FROM				Percentag e proportion of Res- piratory Deaths to Total Deaths.
			Influenza.	Pneumonia and Broncho- pneumonia	Bronchitis.	Total Res- piratory Deaths.	
Jan. 4	310	18·7	4	36	14	57	18·4
,, 11	294	17·7	2	29	12	42	14·2
,, 18	266	16·0	—	28	10	42	15·7
,, 25	315	19·0	4	38	14	55	17·4
Feb. 1	250	15·0	2	21	15	39	15·6
,, 8	263	15·8	3	24	10	40	15·2
,, 15	260	15·6	3	32	15	51	19·6
,, 22	287	17·3	2	29	15	45	15·6
,, 29	290	17·5	2	34	12	50	17·2
Mar. 7	269	16·2	1	29	10	39	14·4
,, 14	211	12·7	2	25	7	34	16·1
,, 21	240	14·4	4	33	5	40	16·6
,, 28	229	13·8	—	22	7	31	13·5
April 4	204	12·3	1	27	9	37	18·1
,, 11	246	14·8	—	25	6	32	13·0
,, 18	212	12·8	1	12	11	24	11·3
,, 25	217	13·1	2	16	2	18	8·3
May 2	194	11·7	2	20	6	32	16·4
,, 9	220	13·2	2	22	2	25	11·3
,, 16	194	11·7	2	14	4	22	11·3
,, 23	190	11·4	—	10	7	18	9·4
,, 30	184	11·1	2	16	3	19	10·8
June 6	207	12·5	—	19	5	25	12·0
,, 13	166	10·0	1	7	2	10	6·0
,, 20	181	10·9	—	17	3	20	11·0

1936. Week ended.	Total Deaths (all causes).	Weekly Death- rate per 1,000 of Estimated Population	NUMBER OF DEATHS FROM				Percentage proportion of Res- piratory Deaths to Total Deaths.
			Influenza.	Pneumonia and Broncho- pneumonia	Bronchitis.	Total Res- piratory Deaths.	
June 27	181	10·9	1	12	1	14	7·7
July 4	190	11·4	—	12	4	17	8·9
,, 11	159	9·6	1	8	1	10	6·3
,, 18	157	9·4	1	11	—	12	7·6
,, 25	157	9·4	—	6	3	9	5·7
Aug. 1	179	10·8	1	11	4	17	9·5
,, 8	170	10·2	—	14	3	17	10·0
,, 15	159	9·6	—	6	1	8	5·0
,, 22	138	8·3	—	6	1	9	6·5
,, 29	152	9·1	1	5	4	10	6·5
Sept. 5	147	8·8	—	8	—	9	6·1
,, 12	144	8·7	1	8	3	11	7·6
,, 19	161	9·7	—	16	1	21	13·0
,, 26	163	9·8	—	11	3	15	9·2
Oct. 3	166	10·0	—	13	2	17	10·2
,, 10	181	10·9	—	13	3	22	12·1
,, 17	219	13·2	2	24	6	32	14·6
,, 24	206	12·4	1	22	10	35	16·9
,, 31	198	11·9	—	19	5	26	13·1
Nov. 7	171	10·3	—	13	5	21	12·2
,, 14	180	10·8	—	18	7	27	14·9
,, 21	196	11·8	3	17	3	22	11·2
,, 28	232	14·0	1	19	10	30	12·9
Dec. 5	223	13·4	1	20	6	28	12·5
,, 12	209	12·6	3	30	3	33	15·7
,, 19	246	14·8	1	31	12	45	18·2
,, 26	163	13·7	1	15	7	24	14·7

### Dysentery.

During 1936, six cases of bacillary dysentery and one case of amoebic dysentery were reported in the City. Of the former, 5 cases were due to Flexner's bacillus and one case to Sonne's bacillus. In addition, one case of amoebic dysentery was brought into the Port of Liverpool from overseas.

### Diarrhoea and Enteritis.

During 1936, there were 150 deaths recorded from diarrhoea and enteritis at all ages, of which number 128 were in children under two years of age and 121 were in children under one year old. The deaths of 128 children under two years of age represent a mortality-rate of 3·7 per 1,000 births taking place in the city during the last two years. This figure represents a decrease of 74 deaths compared with the previous year. Enquiries into these fatal cases have been carried out by the health visitors, and an account of their investigations will be found on page 109.

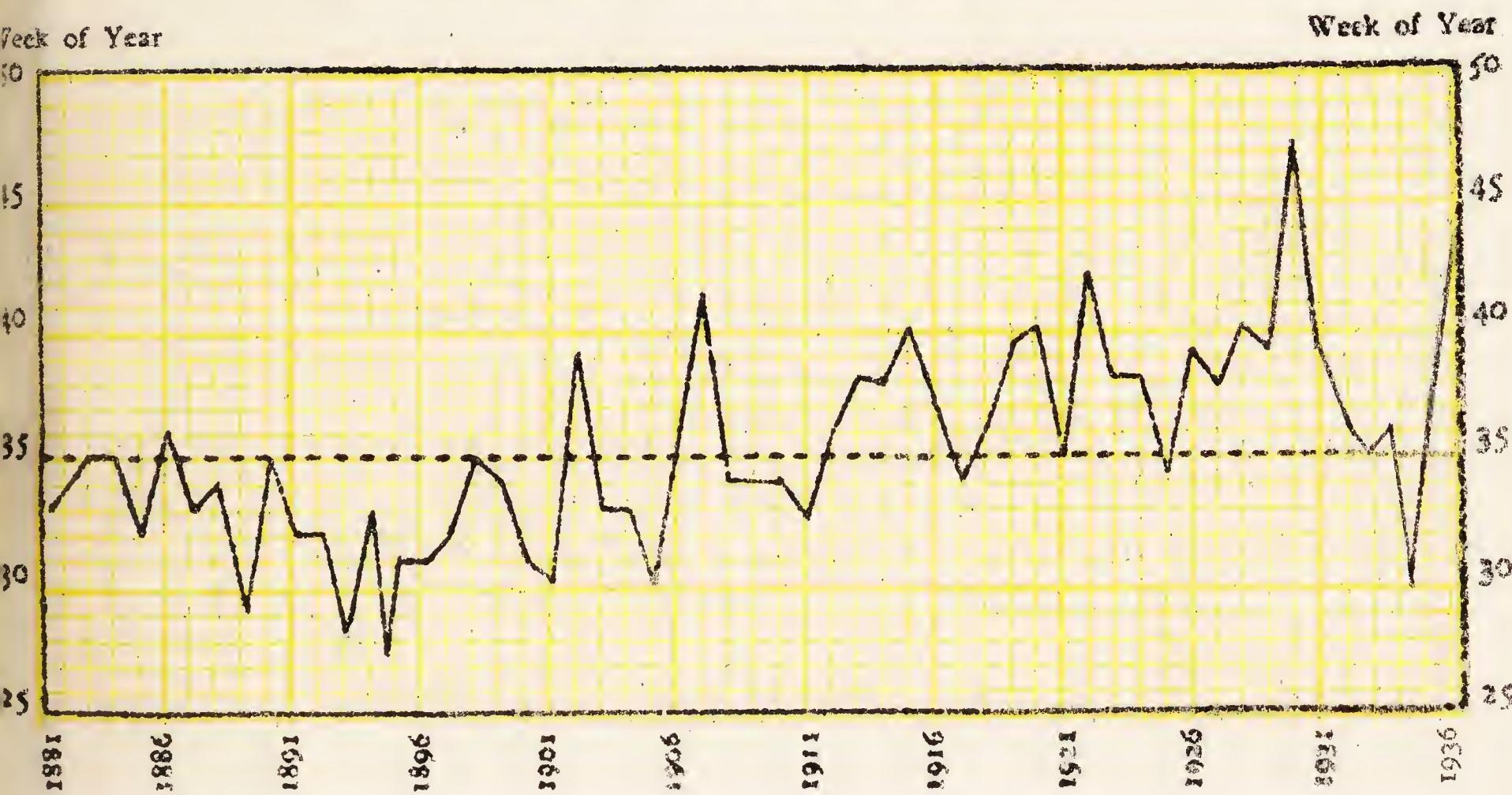
Formerly many deaths occurred from an acute infective disease or group of diseases of which the predominating symptoms were an acute onset with diarrhoea and vomiting, often preceded by convulsions, and terminating rapidly in children under two years of age. This disease assumed the form of an annually recurring summer epidemic, which had a well-marked maximum in August or September. This influence is still operative, though to a much lesser degree. (See chart facing this page.)

The importance of flies as carriers of this infection is referred to in a later paragraph on page 74, and a description of the steps taken to deal with the breeding places of flies occurs on page 198.

The mortality in the several districts of the city is shown in Table XXXI.

# CITY OF LIVERPOOL.

Graph showing for each of the 56 years 1881-1936 the week in which the maximum number of deaths from Diarrhoeal Diseases was recorded. This Graph shows the progressive retardation of the height of the seasonal wave, a retardation which has occurred concurrently with the great decline and virtual extinction of Diarrhoea, as a cause of death.



# CITY OF LIVERPOOL

MAP OF THE CITY OF LIVERPOOL  
AND ITS ENVIRONS.

This map illustrates the city of Liverpool and its environs, showing the principal streets, roads, and waterways. It also indicates the locations of various landmarks, including the docks, the railway station, and the port. The map is designed to provide a clear and accurate representation of the city's layout and surroundings.

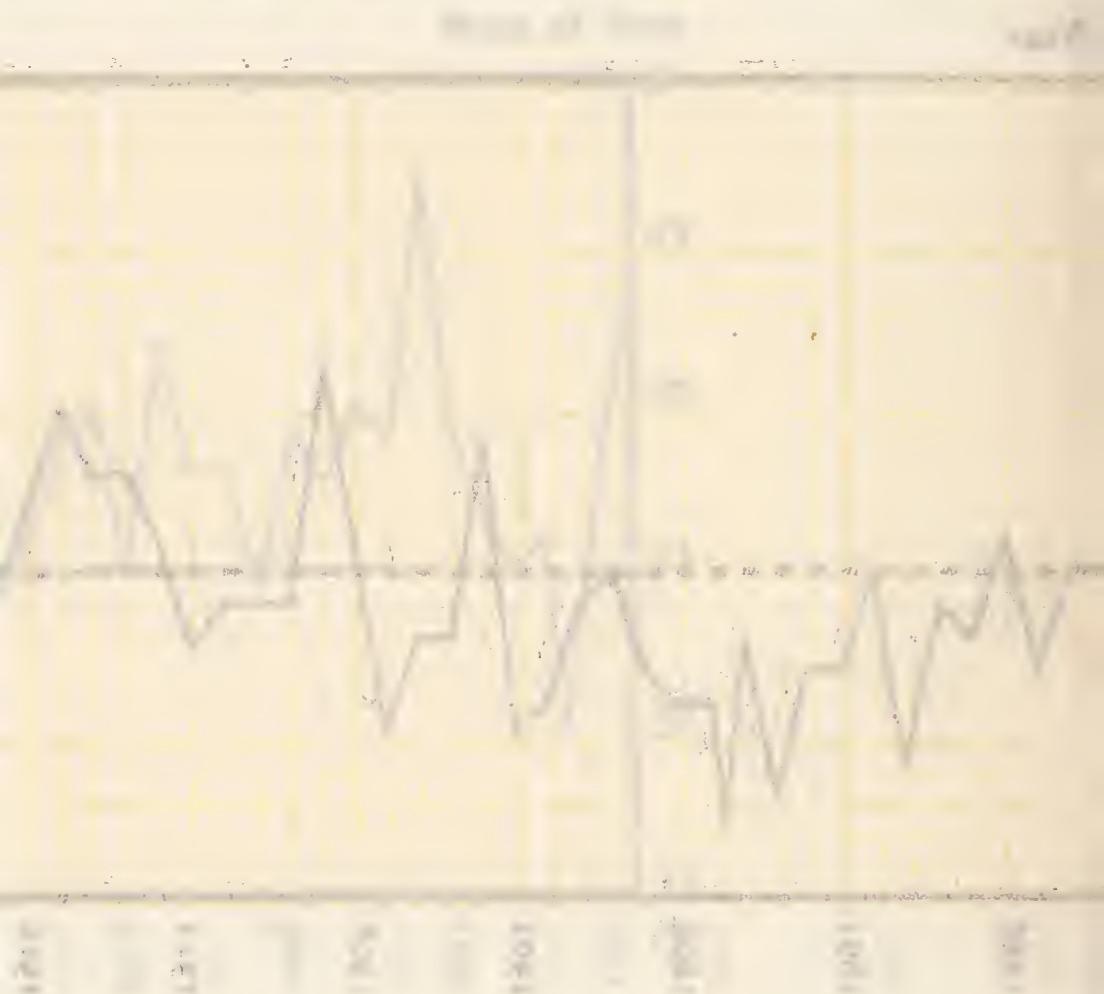


TABLE XXXI.

DIARRHOEA AND ENTERITIS.—MORTALITY-RATE IN CHILDREN UNDER  
2 YEARS OF AGE.

	Registered births 1935-36	Number of deaths in 1936.	Death-rate per 1,000 births registered during 1935 and 1936.
Exchange	3,125	21	6.7
Abercromby	832	5	4.8
St. Peter's	2,626	14	5.3
Toxteth Park	4,122	10	2.4
Edge Hill and Sefton Park	3,977	12	3.3
Wavertree	3,332	19	5.7
Fazakerley	2,772	10	3.6
Walton and Walton Park	2,506	5	2.0
Kirkdale	2,723	6	2.2
Netherfield	3,207	4	1.2
Everton	1,617	9	5.6
West Derby	3,911	13	3.3
	34,750	128	3.7

NOTE.—All deaths occurring in public institutions have been transferred to the districts from which the patients came.

A comparison of the mortality-rate during 1936 in children under 2 years of age with the mortality-rates during the previous nine years is given in Table XXXII.

TABLE XXXII.

DIARRHOEA AND ENTERITIS—MORTALITY RATES DURING 1936 AND  
NINE PREVIOUS YEARS.

Mortality-rate per 1,000 births in year of record and preceding year	1927	1928	1929	1930	1931	1932	1933	1934	1935	1936
...	13.3	9.9	9.9	10.3	7.2	7.2	9.2	4.4	5.8	3.7

Of the 128 deaths under 2 years of age, 92 took place in public institutions as shown in Table XXXIII.

TABLE XXXIII.

DEATHS FROM DIARRHOEA AND ENTERITIS UNDER TWO YEARS OF AGE  
IN INSTITUTIONS DURING 1936.

Alder Hey Hospital	...	...	...	...	...	...	38
David Lewis Northern Hospital	...	...	...	...	...	...	5
Royal Liverpool Children's Hospital			...	...	...	...	28
Mill Road Infirmary	...	...	...	...	...	...	5
Carnegie Welfare Centre	...	...	...	...	...	...	1
Royal Southern Hospital	...	...	...	...	...	...	3
Walton Hospital	...	...	...	...	...	...	1
Royal Liverpool Babies Hospital	...	...	...	...	...	...	6
Olive Mount Children's Hospital	...	...	...	...	...	...	2
Garston Hospital	...	...	...	...	...	...	1
Belmont Road Institution	...	...	...	...	...	...	1
Maternity Hospital	...	...	...	...	...	...	1
							92

The reduction in the number of deaths at Alder Hey Hospital is most noticeable; in the year 1929 there were 218 deaths from diarrhoea in this hospital.

In Table XXXIV are given details relating to the districts in which deaths from diarrhoea and enteritis took place, the ages at death and the distribution of the deaths over the four quarters of the year. It will be noted that the greatest number of deaths occurred in the second quarter of the year—when respiratory infections are prevalent—and not, as formerly, was the case, in the third quarter of the year.

# CITY OF LIVERPOOL

www.liverpool.gov.uk/corporate/governance/audit.aspx

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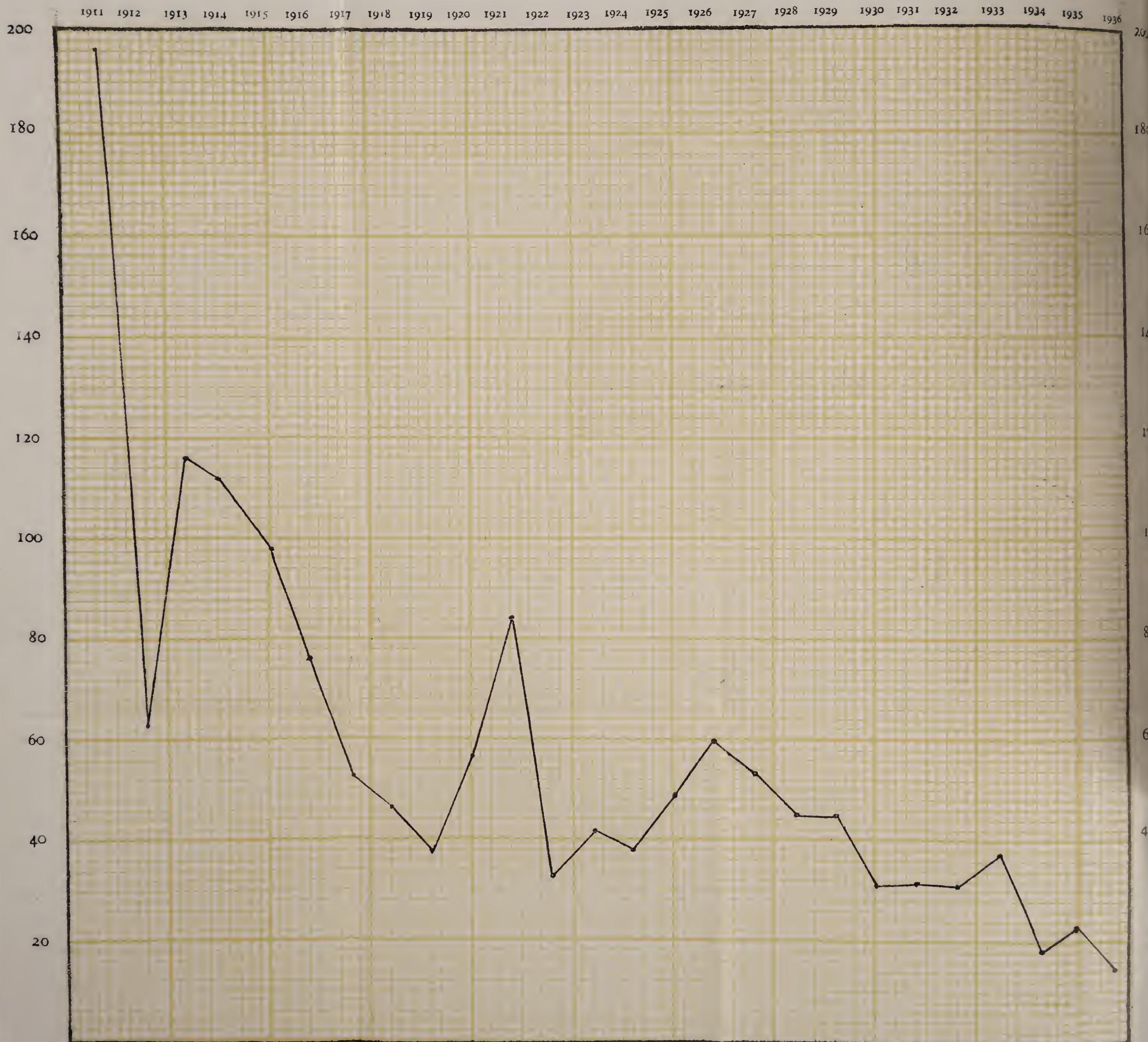
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# CITY OF LIVERPOOL.

DIARRHOEA AND ENTERITIS (UNDER 2 YEARS OF AGE) DEATH RATES PER 100,000 POPULATION, 1911-1936



CITY OF FLAEROOI

ANNUAL REPORT OF THE CITY OF FLAEROOI FOR THE YEAR 1891.



# CITY OF LIVERPOOL.

DEATHS FROM DIARRHOEA & ENTERITIS (UNDER 2 YEARS OF AGE) DURING THE  
YEARS 1921—1936

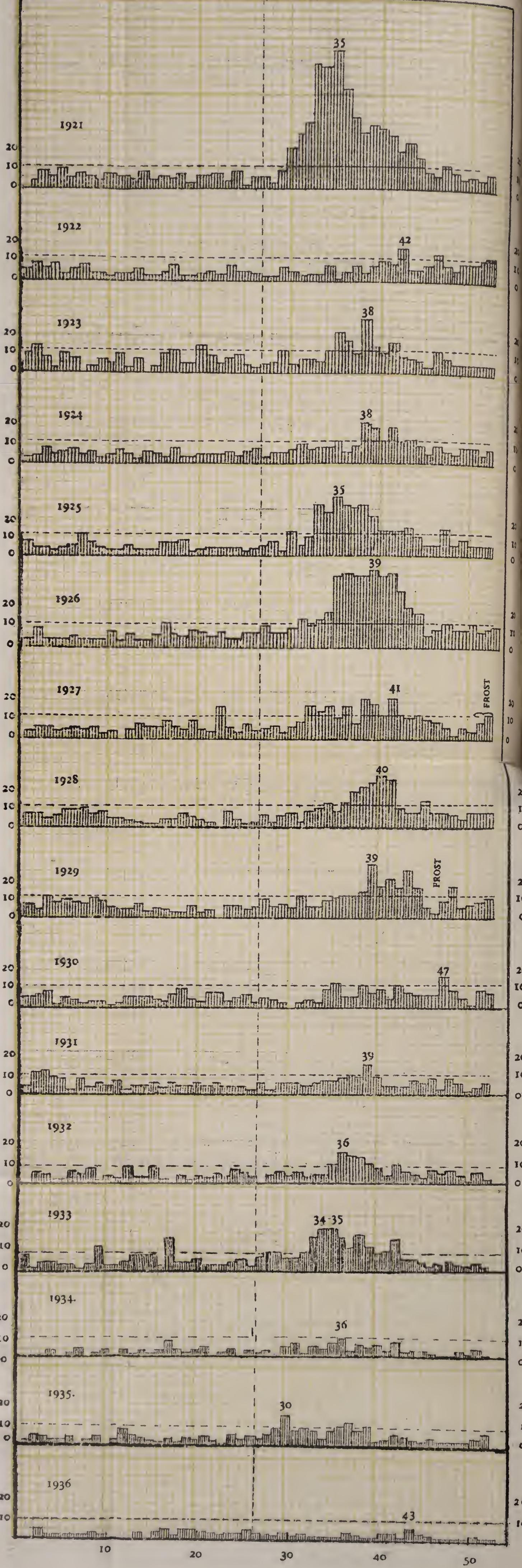


TABLE XXXIV.

DEATHS FROM DIARRHOEA AND ENTERITIS (UNDER TWO YEARS).

DISTRICTS.	QUARTERS.								YEAR 1936.		
	March.		June.		Sept.		Dec.		M.	F.	Total
	M.	F.	M.	F.	M.	F.	M.	F.	M.	F.	
Exchange .....	1	2	1	3	4	2	4	4	10	11	21
Abercromby .....	...	...	...	2	1	...	1	1	2	3	5
St. Peter's .....	...	3	2	3	...	1	1	4	3	11	14
Toxteth Park .....	...	1	2	2	1	2	2	...	5	5	10
Edge Hill & Sefton Park...	2	...	2	1	1	1	2	3	7	5	12
Wavertree .....	3	...	6	4	3	1	...	2	12	7	19
Fazakerley .....	...	1	5	...	...	1	...	3	5	5	10
Walton & Walton Park ...	...	...	2	...	1	1	1	...	4	1	5
Kirkdale .....	1	1	1	...	1	1	...	1	3	3	6
Netherfield .....	1	...	1	1	...	...	1	...	3	1	4
Everton .....	...	2	2	2	2	...	1	...	5	4	9
West Derby .....	3	1	1	...	2	1	2	3	8	5	13
City .....	11	11	25	18	16	11	15	21	67	61	128

## AGES AT DEATH.

Under 1 year	...	...	...	...	...	...	...	121
1 to 2 years	...	...	...	...	...	...	...	7
TOTAL	...	...	..	...	...	...	...	128

## DEATHS FROM DIARRHOEA AND ENTERITIS SEPARATELY.

	QUARTERS.				YEAR.
	1ST.	2ND.	3RD.	4TH.	
Diarrhoea .....	1	1	5	8	15
Enteritis .....	21	42	22	28	113
Total ...	22	43	27	36	128

N.B.—Deaths in public institutions are transferred to the districts from which the patients came.

The experience of many years points strongly to the importance of flies as carriers of infection. Collections of stable manure form the most important breeding places for these insects. Regular visits of inspection are paid to stables, and the occupiers are told of the desirability of regular weekly removals of manure. The following notice has been issued to the owners of stables in recent years with the object of securing frequent removal of manure :—

#### REMOVAL OF MANURE FROM STABLES.

---

The Health Committee is very desirous that Manure from Stables should be removed with as little delay as possible, and with this object in view, arrangements have been made with the City Engineer for its speedy removal.

On application to the City Engineer, Municipal Offices, Dale Street, Manure will be removed from stable yards as often as required, free of charge.

#### Public Health (Infectious Diseases) Regulations, 1927.

The following statement shows the number of notifications received under the regulations and the number of deaths during 1935 and 1936 :—

	1935.		1936.	
	Cases.	Deaths.	Cases.	Deaths.
Acute Pneumonia ... ...	2,230	1,247	1,680	1,004
Malaria ... ... ...	15	4	41	3
Dysentery ... ... ...	3	4	7	3
	2,248	1,255	1,728	1,010

Enquiries were made into all these cases; 726 cases of pneumonia were visited and 10 received assistance from nurses appointed for the purpose, 38 revisits being made.

### Infectious Diseases in Schools.

The number of cases of infectious disease reported in children of school age during the year was 2,618 less than in the previous year, 7,867 cases being reported as against 10,128, 11,800, 13,146, 13,624 and 10,485 for the years 1931 to 1935 respectively.

Compared with last year, the reduction in the number of cases reported was shared by all the infectious diseases, and was greatest in the cases of mumps, chickenpox and measles.

Diphtheria showed a reduction of 102 cases, 1,465 cases being reported as against 1,567 for the previous year.

One school was closed for two weeks during the year owing to the prevalence of measles and mumps. This course was taken as the school was of a "rural" type and was attended by scholars from a wide and scattered area.

The arrangements introduced in 1932 for the inoculation of children attending the infants' departments of public elementary schools were continued. Visits for this purpose were paid to 80 schools.

The response varied considerably in the different schools, but taking the schools as a whole, approximately 28 per cent. of the infants attending were inoculated.

The following schools were visited and inoculation carried out:—

All Saints, Anfield.	Butler Street Council.
All Souls, Collingwood Street.	Christ Church, Aughton Street.
Anfield Road Council.	Christ Church, Christian Street.
Arnot Street Council.	Corinthian Avenue Council.
Banks Road Council.	Dovedale Road Council.
Barlows Lane Council.	Everton Road Nursery School.
Birchfield Road Council.	Florence Melly Council.
Bishop Goss	Formosa Drive Council.
Boaler Street Council.	Friary R.C.
Broadgreen Road Council.	Garston R.C.
Broad Square Council.	Gilmour Council, Danefield Road.

Gilmour Council, Duncombe Road.	St. Cecilia's R.C.
Holy Cross.	St. Cleopas C.E.
Holy Name R.C., Fazakerley.	St. Francis de Sales R.C.
Holy Trinity R.C., Garston.	St. Hugh's R.C., Earle Road.
Knotty Ash C.E.	St. John the Baptist, Tuebrook.
Knowsley, Colwell Road Council.	St. John's R.C., Sessions Road.
Lawrence Road Council.	St. Jude's C.E.
Leamington Road Council.	St. Lawrence C.E.
Lister Drive Council.	St. Malachy's R.C., Robertson Street.
Maidford Road Council.	St. Margaret's C.E., Belmont Road.
Matthew Arnold Council.	St. Margaret Mary.
Monksdown Road Council.	St. Mary's C.E., Everton Valley.
Mossplats Lane Council.	St. Matthew's R.C., Newhall Lane.
Much Woolton C.E.	St. Michael's Council.
North Way Council.	St. Michael's R.C., York Street.
Parkhill Council.	St. Oswald's R.C.
Ranworth Square Council.	St. Paul's C.E., Brasenose Road.
Roscoe Council, Ballantyne Road.	St. Paul's C.E., Byles Street.
South Church of England.	St. Peter's R.C., Seel Street.
S. Alban's R.C.	St. Saviour's C.E., Canning Street.
St. Alphonsus R.C.	St. Saviour's C.E., Downing Street.
St. Anne's R.C., Goulden Street.	St. Sebastian's R.C., Lockerby Road.
St. Anne's C.E., West Derby.	St. Silas C.E., High Park Street.
St. Anthony's R.C.	St. Vincent's R.C.
St. Athanasius C.E.	Vine Street Methodist.
St. Augustine's R.C., Stone Street.	Walton C.E.
St. Bartholomew's C.E.	Warbreck Council, Longmoor Lane.
St. Bernard's R.C.	Warbreck Council, Rice Lane.
St. Catherine's C.E.	West Derby, C.E.

The total number of school children inoculated at the schools was 6,251. In addition, several hundred children of school age were inoculated at the two immunisation clinics, held at the Carnegie Welfare Centre and the Norris Green Clinic.

The following tables show the number of cases of the common infectious diseases, with the ages of the children affected and the monthly distribution of the cases.

TABLE XXXV.  
SCHOOL CASES OF INFECTIOUS DISEASE OCCURRING DURING 1936.  
AGE DISTRIBUTION.

DISEASE.	Under 5 years.	5 +	6 +	Total under 7 years.	7 +	8 +	9 +	10 +	11 +	12 +	13 +	14 +	Total above 7 years.	Grand Total.
Diphtheria ...	63	246	240	549	213	146	145	104	102	117	70	19	916	1,465
Scarlet Fever ...	37	192	174	403	158	113	75	62	33	49	20	24	554	957
Measles ...	195	1,299	862	2,356	362	125	96	58	58	35	28	21	783	3,139
Whooping Cough ...	32	203	129	364	47	18	7	3	2	3	—	—	80	444
Chickenpox ...	85	321	296	702	225	109	60	44	29	30	15	10	522	1,224
Mumps ...	24	146...	181	351	118	58	43	25	15	15	10	3	287	638
TOTALS ...	436	2,407	1,882	4,725	1,123	569	426	296	259	249	143	77	3,142	7,867

TABLE XXXVI.  
SCHOOL CASES OF INFECTIOUS DISEASE DURING 1936.  
MONTHLY DISTRIBUTION.

DISEASE.	Jan.	Feb.	March.	April.	May.	June.	July	Aug.	Sept.	Oct.	Nov.	Dec.	Total.
Diphtheria	106	114	99	80	95	75	114	160	180	169	178	1,465	78
Scarlet Fever	77	79	95	97	96	77	57	59	63	93	74	90	957
Measles	1,017	962	379	215	239	137	62	22	28	27	16	35	3,139
Whooping Cough	63	89	77	29	71	25	1	16	21	18	15	19	444
Chickenpox	113	106	104	55	105	174	52	35	83	94	132	171	1,224
Mumps	102	86	47	24	52	21	7	10	53	53	99	84	638
TOTALS	1,478	1,436	801	500	658	529	254	256	408	465	505	577	7,867

**Co-operation between the Health and Education Departments.**

Information is sent both to the Director of Education and also to the head teachers of the schools concerned when it is found that children from infected houses are attending school. During 1936 16,374 children who had been exposed to infection were reported in this way.

During the year, 4,290 visits to schools were paid by sanitary inspectors and 130 defects were found and subsequently remedied.

References from the Education Department to the Health Department concerning the occurrence of infectious or suspected infectious illness totalled 3,286 during the year.



MATERNITY AND  
CHILD WELFARE.

## MATERNITY and CHILD WELFARE.

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Summary of Vital Statistics for 1936:—

Live births	...	<b>17,403</b>	Live birth rate	...	<b>20·07</b>
Still-births	...	<b>708</b>	Still-birth rate	...	<b>0·81</b>
			Total births	...	<b>18,111</b>
Infant Mortality rate	...	...	...	...	<b>75</b>
Neo-natal Mortality rate	...	...	...	...	<b>33</b>
Maternal Mortality rate	...	...	...	...	<b>3·53</b>

The maternity and child welfare work in this city is very comprehensive. The whole scheme is designed to reduce maternal and infantile mortality and morbidity, and entails not only the harmonious and co-ordinated action of all officially engaged in it, but also active co-operation with all voluntary agencies, medical and social, whose efforts are directed towards the improvement and maintenance of public health.

The maternity and child welfare scheme operative in this city is given in outline in the following pages.

### THE MIDWIFERY DEPARTMENT.

In this are included:

- i. The quarterly routine visiting of midwives in their own homes for inspection of registers, records and equipment, under the Central Midwives Board Rules.
- ii. The investigation of all cases of:—
  - (a) Medical assistance sought by midwives (Central Midwives' Board Rules).

- (b) Puerperal Pyrexia and Puerperal Fever, under the Public Health (Notification of Puerperal Fever and Puerperal Pyrexia) Regulations, 1926 and 1928.
- (c) Claims for fees in indigent cases, under Maternity and Child Welfare Act, 1918.
- (d) Claims from midwives suspended so as to prevent the spread of infection (Midwives and Maternity Homes Act, 1926).
- (e) Maternal deaths for the special report to the Ministry of Health.
- (f) Ophthalmia Neonatorum, and the giving of treatment where required under Ophthalmia Neonatorum Regulations, 1926.
- (g) Pemphigus.

- iii. The visiting of Lying-in Homes registered under the Liverpool Corporation Act, 1921, and Midwives and Maternity Homes Act, 1926, also visiting of Nursing Homes under Nursing Homes Registration Act, 1927.
- iv. Any other enquiries, investigations or advice relating to the practice of midwives in the city.

During the year, 281 midwives gave the required notice under section 10 of the Midwives Act, 1902, of their intention to practise midwifery in this city.

#### **Notification of Live and Still-Births.**

A total of 8,739 births (8,494 live births and 245 still-births) were attended by midwives during the year, which represented 46·1 per cent. of the total (live and still) births notified in the City. The total number of births which took place in institutions during the year was 8,856 (8,384 live births, 472 still-births).

**Statement of Notifications of Live and Still Births received during the Years 1935 and 1936.**

Notifications Received from	1935.			1936.		
	Live Births.	Still Births.	Total.	Percentage of births notified.	Live Births.	Still Births.
Certified Midwives .....	7,210	217	7,427	40·1	6,922	202
Medical Attendants .....	1,233	64	1,297	7·0	1,291	52
Transferred Institutions .....	5,194	297	5,491	29·6	5,898	302
Liverpool Maternity Hospital.....	1,696	129	1,825	9·8	1,651	143
“ Rest Home,” Chatham Street .....	262	7	269	1·5	295	5
District Homes .....	1,622	43	1,665	9·0	1,572	43
Royal Infirmary .....	503	22	525	2·8	518	19
Other Institutions .....	28	1	29	0·2	22	3
Parents .....	—	—	—	—	1	—
	17,748	780	18,528	100·0	18,170	769
						18,939
						100·0

44

The number of still-births notified during the year was 769\*, of which number 245 were notified by midwives, being at the rate of 2·8 per cent. of the births attended by them. Enquiries were made into the circumstances of all still-births, and the number of visits paid was 683.

### Routine Visits to Midwives.

Rule 25 laid down by the Central Midwives Board states :—

“ The Local Supervising Authority shall make arrangements to “ secure a proper inspection of the register of cases, bag of “ appliances, etc., of every midwife practising in the district of “ such authority, and when thought necessary, an inspection of “ her place of residence, and an investigation of her mode of “ practice.”

During the year, 1,223 visits were paid to the homes of practising midwives for the purpose of inspection, and for special enquiries relating to their work.

### Medical Assistance.

Under the rules issued by the Central Midwives Board, a midwife must advise that medical assistance shall be called in where there is any abnormal circumstance connected with the confinement.

The following table gives the details of the complications for which medical aid was advised by midwives, the total number of medical records being 2,704.

*Mother—*

Obstructed labour, uterine inertia or requiring instrumental assistance	...	...	...	...	...	...	425
Ruptured perinæum	...	...	...	...	...	...	516
Ante-partum haemorrhage	...	...	...	...	...	...	179
Pyrexia	...	...	...	...	...	...	90
Ante-natal treatment	...	...	...	...	...	...	119
Abortion or miscarriage	...	...	...	...	...	...	137
Post-partum haemorrhage	...	...	...	...	...	...	92
						Carried forward ...	1,558

\* The total number of still-births registered under the Births and Deaths Registration Act, 1926, during the year 1936 was 708 (see p. 5).

					Brought forward ...	1,558
Retained placenta or membranes	...	...	...	...		52
Varicose veins—inflamed legs, etc. (not A.N.)	...	...	...	...		26
Premature birth	...	...	...	...		6
Multiple births	...	...	...	...		15
Eclampsia	...	...	...	...		10
Deformed pelvis	...	...	...	...		6
Influenza	...	...	...	...		—
Abnormal presentation:						
Breech presentation	...	...	...	...		40
Occipito-posterior position	...	...	...	...		47
Cord presentation	...	...	...	...		14
Foot presentation	...	...	...	...		8
Brow or face presentation	...	...	...	...		8
Transverse presentation	...	...	...	...		10
Placenta prævia	...	...	...	...		9
Various	...	...	...	...		227
						2,036

*Child—*

Feebleness and prematurity	...	...	...	...	...	193
Ophthalmia	...	...	...	...	...	238
Skin eruption	...	...	...	...	...	42
Malformations	...	...	...	...	...	46
Convulsions	...	...	...	...	...	10
Injury at birth	...	...	...	...	...	3
Other conditions in child	...	...	...	...	...	136
						668
Total	...	...	...	...	...	2,704

**Claims for Fees in Emergency Cases.**

Payment may be made by Local Supervising Authorities to medical practitioners called in by midwives under section 14 of the Midwives Act, 1918. During the year, 2,969 visits and re-visits were paid in regard to these accounts. Applicants are assessed on a scale of income, due

consideration being given to cases where any special expenditure has been incurred in the interests of the mother or child. The whole or part of the doctor's fee is paid in almost all cases by the Maternity and Child Welfare Sub-Committee.

During the year the total number of occasions on which the services of a consultant obstetrician in connection with cases of puerperal fever, puerperal pyrexia or complications during pregnancy were requisitioned was 20. The ability of the patient to pay was investigated, and in 18 of these cases, the whole fee was defrayed by the Maternity and Child Welfare Sub-Committee.

During the year, 1,019 claims from midwives for necessitous midwifery were investigated, 1,011 of which were paid.

#### **Claims from Midwives who were suspended from Practice.**

Section 2 (1) Midwives and Maternity Homes Act, 1926, gives a midwife who is suspended from practice (not herself being in default) in order to prevent the spread of infection, the right to recover reasonable compensation from the Local Authority. One claim under this section was paid during 1936, to a midwife who was suffering from a septic finger.

#### **Public Health (Notification of Puerperal Fever and Puerperal Pyrexia) Regulations, 1926 and 1928.**

These regulations require the notification to the Medical Officer of Health of any febrile condition occurring in a woman within 21 days of childbirth or miscarriage, in which a temperature of 100·4° Fahrenheit or more has been sustained during a period of 24 hours or has recurred during that period. Puerperal fever was, and still continues to be, notifiable under the Infectious Disease (Notification) Act, 1889, to which the above regulations are supplementary.

With the object of securing adequate treatment in the early stages of this somewhat ill-defined condition, the prescribed notification form provides that the medical attendant can ask for (1) a second opinion on the case, (2) certain bacteriological examinations, (3) admission of

the patient to hospital or (4) the provision of trained nurses; or, alternatively, state that facilities for all necessary treatment exist.

The services of consultant obstetricians have been provided by the Maternity and Child Welfare Sub-Committee, under the Public Health (Notification of Puerperal Fever and Puerperal Pyrexia) Regulations, 1926 and 1928, and Memo. 156/M.C.W. Hospital accommodation has for some years been provided, in Walton and Smithdown Road Hospitals, and Mill Road Infirmary. Arrangements have also been made by which the services of the nurses of the Queen Victoria District Nursing Association are available.

### **Puerperal Pyrexia.**

The number of cases of puerperal pyrexia notified during the year was 359. Of these 11 were found to be puerperal septicæmia, and, therefore, fall within the definition of puerperal fever. One was a case of influenzal-pneumonia, two were cases of lobar pneumonia, and one of broncho-pneumonia. The remaining 344 were cases of pyrexia of puerperal origin of a lesser degree than is legally termed puerperal fever. Of these cases 322 were admitted to or occurred in hospitals, and 59 occurred in the practice of midwives. In four cases a consultant obstetrician was called in, and in 8 cases nurses were provided.

### **Puerperal Fever.**

The number of cases of puerperal fever notified to the medical officer of health during the year was 42 of which 20 proved fatal. This gives a puerperal fever death rate of 1·1 per 1,000 total (live and still) births registered in the city.

Forty cases of puerperal fever were admitted to or occurred in hospital, viz.:—6 in Mill Road Infirmary, 16 in Walton Hospital, 4 in Smithdown Road Hospital, 12 in Liverpool Maternity Hospital, 1 in Women's Hospital, and 1 in Stanley Hospital. After the usual enquiries were made, 15 cases (of which 9 died) were found to have occurred in the practice of midwives.

JOHNSON REPORT

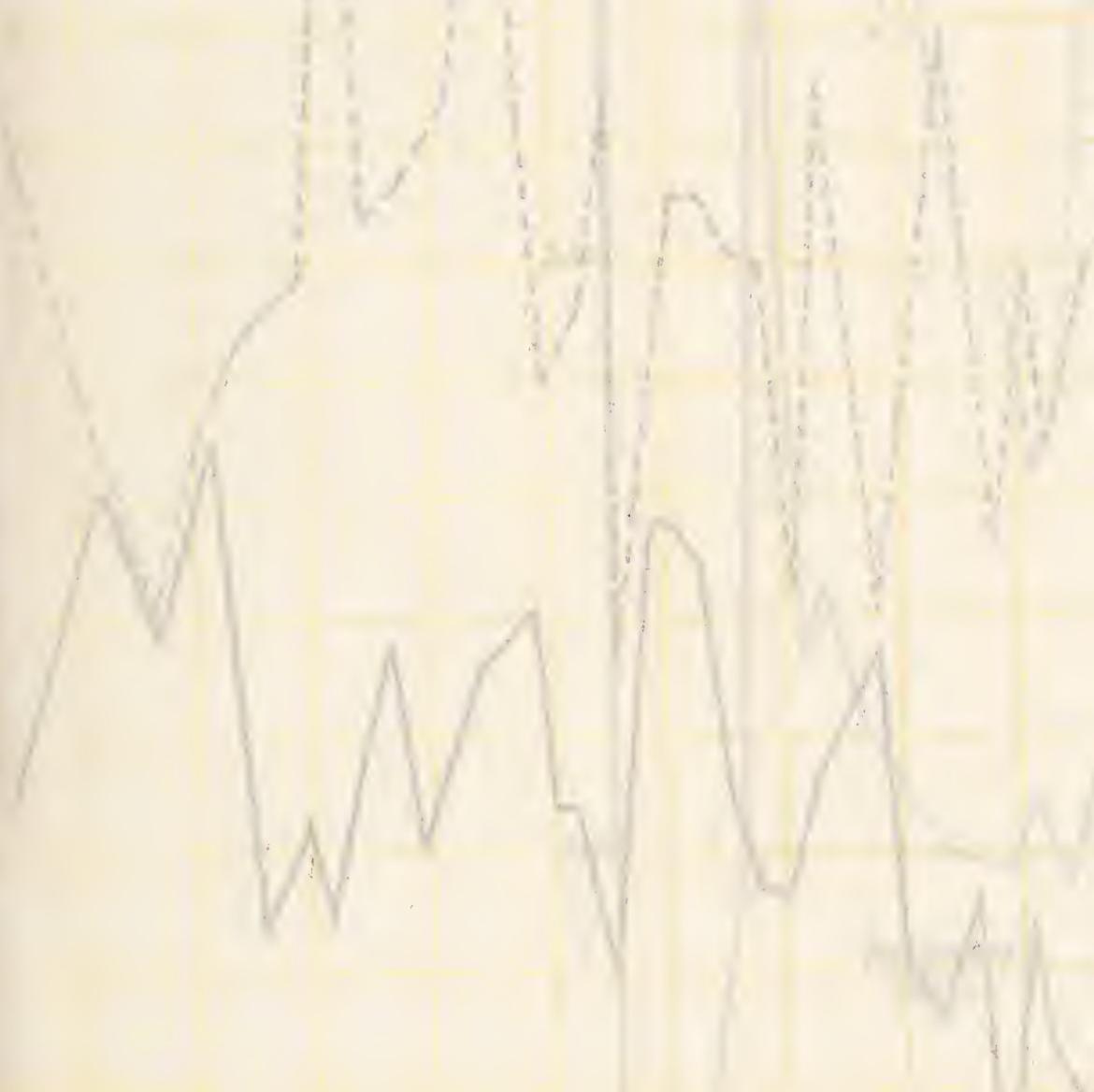
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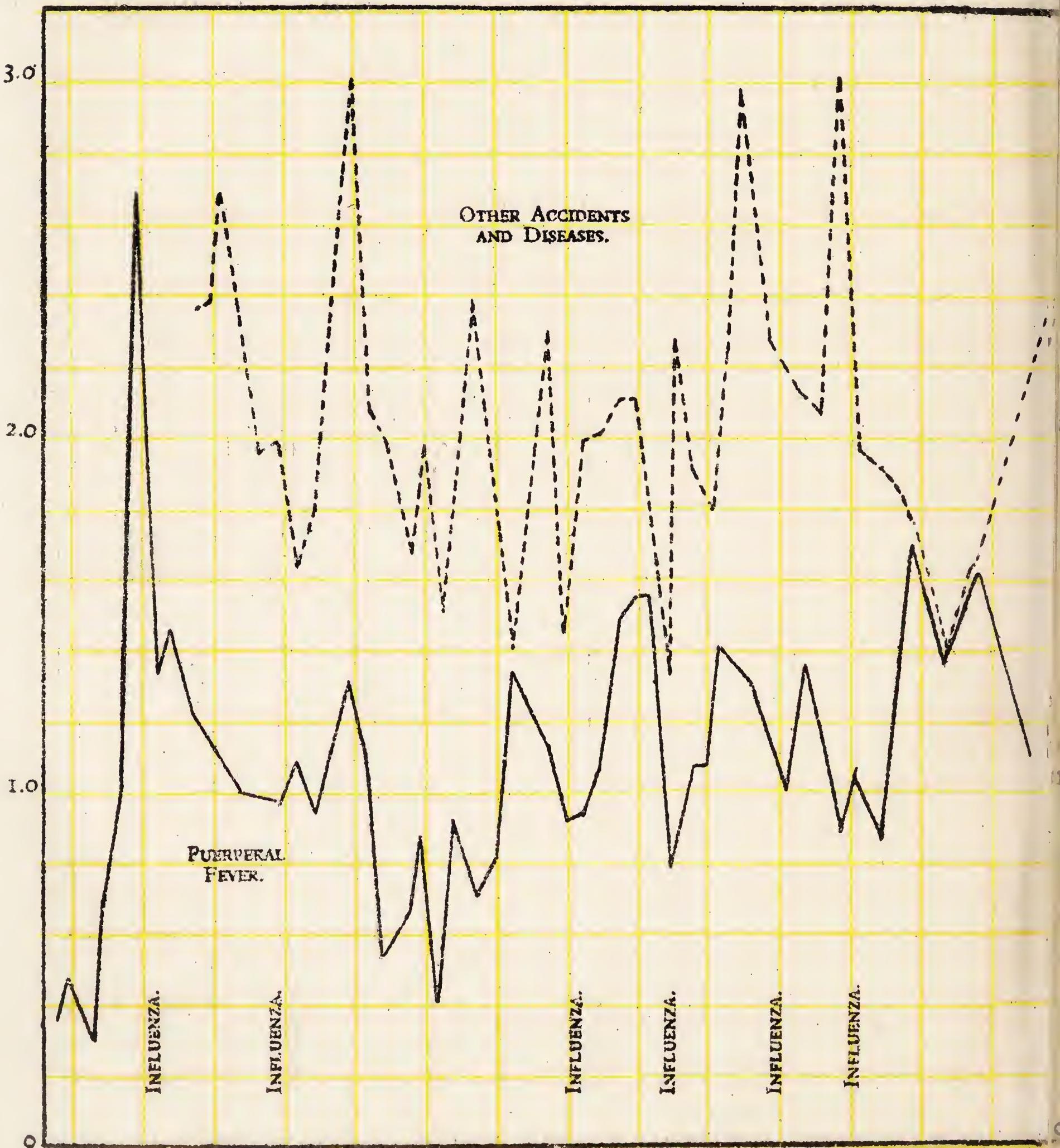
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# CITY OF LIVERPOOL

MORTALITY PER 1000 BIRTHS FROM PUERPERAL FEVER AND  
OTHER ACCIDENTS AND DISEASES OF PREGNANCY, 1888-1936

1888 9 8 1 2 3 4 5 6 7 8 9 1890 1 2 3 4 5 6 7 8 9 1891 1 2 3 4 5 6 7 8 9 1910 1 2 3 4 5 6 7 8 9 1920 1 2 3 4 5 6 7 8 9 1930 1 2 3 4 5



### Maternal Mortality.

Table showing the number of Live and Still Births registered in the City, together with Maternal Deaths and Maternal Death Rates, for the years 1921 to 1936.

Year.	BIRTHS REGISTERED.			MATERNAL MORTALITY.					
				Puerperal Fever.		Other Puerperal Causes.		Total.	
	Live Births.	* Still Births.	Total Births.	Deaths.	Rate per 1,000 total births.	Deaths.	Rate per 1,000 total births.	Deaths.	Rate per 1,000 total (live and still) births.
1921	21,904	764	22,668	34	1·50	46	2·03	80	3·53
1922	21,467	740	22,207	33	1·49	28	1·26	61	2·75
1923	20,695	736	21,431	16	0·75	47	2·19	63	2·94
1924	20,559	735	21,294	22	1·03	39	1·83	61	2·86
1925	19,592	716	20,308	21	1·03	36	1·77	57	2·80
1926	19,792	665	20,457	28	1·37	43	2·10	71	3·47
1927	19,020	735	19,755	25	1·26	58	2·94	83	4·20
1928	19,120	816	19,936	19	0·95	45	2·26	64	3·21
1929	18,888	753	19,641	26	1·32	40	2·04	66	3·36
1930	18,881	774	19,655	16	0·81	59	3·00	75	3·81
1931	18,626	722	19,348	20	1·03	35	1·81	55	2·84
1932	18,149	827	18,976	16	0·84	35	1·85	51	2·69
1933	16,929	680	17,609	29	1·65	31	1·76	60	3·41
1934	17,593	685	18,278	25	1·37	26	1·42	51	2·79
1935	17,347	749	18,096	29	1·60	30	1·66	59	3·26
1936	17,403	708	18,111	20	1·10	44	2·43	64	3·53

### Ante-Natal Supervision.

Satisfactory ante-natal care is taken to mean that the patient has had adequate medical examination and specialist's opinion during pregnancy, and that she has been under expert supervision during

\* Still-births are registered under the Births and Deaths Registration Act, 1926 which came into operation in July, 1927, the figures given prior to 1928 are those of notified still-births.

periods when abnormalities would be expected to develop. It will be noticed that in certain cases of death, when ante-natal care has left nothing to be desired, there has been existing disease, which, coupled with the added strain of pregnancy and labour, has combated all efforts to ensure good results.

Under "Inadequate ante-natal care" are grouped those cases where there had been no medical examination, insufficient supervision, or where the patient had attended a clinic once, or perhaps twice, early in pregnancy, or where she had sought medical examination and aid when preventable abnormalities were already irrevocably established and no amount of care could avert disaster.

In 60 per cent. of the cases, the patients have not had satisfactory ante-natal care or supervision, which in 40 per cent. of this group had not been sought at all.

Good general health previous to confinement was present in only 16 per cent. of the patients.

### **Special Investigation of Maternal Deaths.**

Towards the end of 1928, a form of enquiry was issued by the Ministry of Health Maternal Mortality Committee, in which information in regard to every maternal death is collected from medical practitioners, hospitals, clinics, midwives and health visitors, and forwarded to the Ministry of Health.

As a result of these continued inquiries it was found that during the year 1936, 95 deaths occurred owing to pregnancy, child birth or concurrent diseases, such as heart disease or lung disease associated with pregnancy.

## CLASS I:—DEATHS DIRECTLY DUE TO CHILDBEARING.

## 1. Puerperal Sepsis.

Sepsis following normal labour	...	...	...	...	...	...	10
Sepsis following forceps delivery	...	...	...	...	...	...	6
Sepsis following other abnormalities of labour	...	...	...	...	...	...	7
Sepsis following abortion	...	...	...	...	...	...	0
							23
2. Toxaemia (not eclampsia)	...	...	...	...	...	...	4
3. Eclampsia	...	...	...	...	...	...	3
4. Haemorrhage	...	...	...	...	...	...	19
5. Shock	...	...	...	...	...	...	5
6. Embolism	...	...	...	...	...	...	4
7. Ectopic gestation	...	...	...	...	...	...	2
							—
							60

## CLASS II:—DEATHS NOT PRIMARILY DUE TO PREGNANCY.

1. Pneumonia	...	...	...	...	...	...	...	...	15
2. Heart disease	...	...	...	...	...	...	...	...	8
3. Chronic renal disease	...	...	...	...	...	...	...	...	5
4. Unclassified	...	...	...	...	...	...	...	...	7
									—
									35

Of the 95 mothers who died, 91 were treated or delivered in hospital, of whom 58 were admitted to hospital as emergency cases. Ante-natal care and supervision was satisfactory in only 40 cases, i.e., in 42·1 per cent. of the total number; it was inadequate in 23 cases and entirely absent in 17 cases, almost entirely because of lack of intelligent co-operation of the patients.

## Puerperal Sepsis

### Sepsis following Normal Labour.

Reg. No.	Age.		Number of Pregnancy.	Circumstances.	General Health.	Ante-natal Care.	Booked or Emergency for Hospital.	Bacteriological Examination.	Remarks.
2	26	Married	3rd	Poor	Poor	Inadequate	Booked	Streptococci	Oral sepsis, salpingitis and thrombo-phlebitis from post-mortem.
7	30	Married	7th	Poor	Poor	Nil	Emergency	H. Streptococci	Chronic nephritis, sphaerema, empyema.
11	21	Single	1st	Fairly Comfortable	Poor	Nil	Emergency	H. Streptococci	Tonsillitis, adenitis.
16	28	Married	2nd	Fairly Comfortable	Poor	Satisfactory	Emergency	Not examined	Severe bronchitis, chronic ulcer of stomach from post-mortem.
34	23	Married	4th	Fairly Comfortable	Poor	Satisfactory	Booked	Streptococci	Breast abscess, severe varicose veins, pyelitis.
54	20	Married	3rd	Poor	Good	Inadequate	Emergency	H. Streptococci	Severe gastritis and enteritis, malnutrition.
55	35	Married	4th	Poor	Poor	Satisfactory	Booked	Not examined	Oral sepsis, oedema of lungs, mitral stenosis, chronic interstitial nephritis.
65	24	Married	2nd	Poor	Fairly Good	Inadequate	Booked	Pneumococci	Premature labour, cystitis, left salpingitis.
72	32	Married	2nd	Poor	Fairly Good	Inadequate	Emergency	H. Streptococci	Ante-partum haemorrhage, premature labour, pyaemic lung abscess.
89	36	Married	9th	Poor	Fairly Good	Inadequate	Emergency	Not examined	Gas gangrene.

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### Sepsis following Forceps Delivery.

5	40	Married	1st	Poor	Fairly Good	Nil	Emergency	Not examined	Protracted labour, disproportion, craniotomy.
9	35	Married	4th	Poor	Fairly Good	Inadequate	Emergency	Streptococci	Disproportion, failed forceps, albuminuria, septic broncho pneumonia.
14	32	Married	9th	Poor	Poor	Nil	Emergency	Streptococci	Disproportion, deformed spine, craniotomy.
41	34	Married	1st	Fairly Comfortable	Fairly Good	Satisfactory	Emergency	Not examined	Disproportion, failed forceps, multiple abscesses.
51	37	Married	2nd	Fairly Good	Fairly Good	Satisfactory	Emergency	Failed forceps, toxæmia, puerperal	Failed forceps.

17	27	Married	1st	Fairly Good	Satisfactory	Emergency	Negative	Dystocia.
23	29	Married	1st	Fairly Good	Satisfactory	Booked	Not examined	Albuminuria, toxæmia, induction followed by caesarean section.
45	26	Married	1st	Poor	Satisfactory	Booked	Not examined	Toxaemic internal haemorrhage, difficult labour, breech.
48	24	Married	1st	Good	Satisfactory	Booked	H. Streptococci	Contracted pelvis, difficult labour.
53	30	Married	2nd	Fairly Comfortable	Satisfactory	Booked	Staph. aureus.	Disproportion, caesarean section, mal-nourishment.
68	34	Married	2nd	Fairly Good	Satisfactory	Emergency	Not examined	Premature birth, toxæmia, ante-partum haemorrhage, pyelitis.
75	37	Married	1st	Fairly Good	Satisfactory	Booked	Not examined	Disproportion, difficult labour, terminal acute nephritis, paralytic ileus.

### Toxæmia (not Eclampsia).

1	27	Married	5th	Fairly Good	Inadequate	Booked	Hyperemesis gravidarum.	Hyperemesis gravidarum.
49	33	Married	3rd	Fairly Good	Satisfactory	Emergency	Premature labour, oedema both lungs, toxic changes in both kidneys.	Premature labour, oedema both lungs, toxic changes in both kidneys.
58	32	Married	1st	Poor	Inadequate	Emergency	Generalized oedema, locked twins.	Generalized oedema, locked twins.
81	32	Married	2nd	Fairly Comfortable	Satisfactory	Emergency	Undelivered at 7 weeks, hyperemesis gravidarum.	Undelivered at 7 weeks, hyperemesis gravidarum.

### Eclampsia.

38	28	Married	3rd	Poor	Inadequate	Emergency	Chronic cardiac disease, post partum eclampsia.	Chronic cardiac disease, post partum eclampsia.
39	28	Married	1st	Poor	Satisfactory	Booked	Premature labour, post partum eclampsia.	Premature labour, post partum eclampsia.
78	27	Married	1st	Poor	Satisfactory	Booked	Empyema, pleurisy, albuminuria, post partum eclampsia.	Empyema, pleurisy, albuminuria, post partum eclampsia.

## Hæmorrhage,

Reg. No.	Age.	Number of Pregnancy.	Circumstances.	General Health	Ante-natal Care.	Booked or Emergency for Hospital.	Remarks.
3	40	Married	13th	Poor	Inadequate	Booked	Post-partum haemorrhage, arterio-sclerotic nephritis.
18	33	Married	6th	—	Inadequate	Emergency	Accidental haemorrhage, acute pulmonary oedema.
26	38	Married	5th	Poor	Nil	Emergency	Accidental ante-partum haemorrhage.
37	41	Married	10th	Poor	Inadequate	Emergency	Placenta praevia, ante-partum haemorrhage.
44	26	Married	2nd	Fairly Comfortable	Good	Emergency	Acute inversion of uterus.
50	41	Married	6th	Poor	Poor	Emergency	Post-partum haemorrhage, secondary anaemia.
56	31	Married	6th	Poor	Satisfactory	Emergency	Post-partum haemorrhage.
57	29	Married	3rd	Poor	Inadequate	Emergency	Post-partum haemorrhage.
60	41	Married	5th	Fairly Comfortable	Fairly Good	Emergency	Adherent placenta.
70	28	Married	2nd	Poor	Satisfactory	Booked	Adherent placenta.
71	24	Married	3rd	Poor	Inadequate	Emergency	Ante-partum haemorrhage, central placenta praevia.
74	20	Married	1st	Poor	Satisfactory	Booked	3rd stage haemorrhage.
76	38	Married	11th	Poor	Satisfactory	Booked	Chronic anaemia, adherent placenta.
77	44	Married	10th	Poor	Inadequate	Emergency	Placenta praevia.
79	46	Married	14th	Poor	Fairly Good	Booked	Accidental ante-partum haemorrhage.
84	27	Married	1st	Poor	Fairly Good	Nil	Retained placenta.
86	26	Single	1st	Fairly Comfortable	Good	Emergency	Abortion 26 weeks.
87	41	Married	9th	Very Poor	Poor	—	Difficult labour, adherent placenta.

## Shock.

21	30	Married	1st	Fairly Comfortable	Good	Satisfactory	Booked	Manual removal of retained placenta.
59	24	Married	1st	Fairly Good	Satisfactory	Booked	Prolonged labour, adherent placenta.	
82	42	Married	9th	Fairly Good	Satisfactory	Booked	Obstructed labour.	
85	28	Married	1st	Fairly Good	Satisfactory	—	Forceps delivery.	
91	29	Married	8th	Fairly Good Poor	Satisfactory	Emergency	Ruptured uterus.	

## Embolism.

6	41	Married	4th	Poor	Good	Satisfactory	Emergency	Undelivered full term, sudden death.
28	24	Single	1st	Poor	Good	Nil	Emergency	Abortion at 9 weeks, pyelitis, sudden death.
52	38	Married	9th	Poor	Fairly Good	Satisfactory	—	Premature labour, sudden death.
95	21	Single	1st	Very Poor	Information not available	—	Emergency	Died undelivered, pneumonia.

## Ectopic Gestation.

4	41	Married	1st	Poor	Fairly Good	Nil	Emergency	8 weeks, pulmonary oedema.
33	45	Married	4th	Poor	Fairly Good	Satisfactory	Emergency	Haemorrhage at 36 weeks.

## Pneumonia

Reg. No.	Age.		Number of Pregnancy.	Circum- stances.	General Health.	Ante-natal Care.	Booked or Emergency for Hospital.	Remarks.
12	32	Married	6th	Poor	Fairly Good Poor	Satisfactory Inadequate	Booked Emergency	Premature labour, patient had pneumonia when admitted to hospital.
15	31	Married	4th	Poor	Fair	Satisfactory	Booked Emergency	Patient had pneumonia when admitted to hospital.
20	47	Married	9th	Poor	Poor	Nil	Booked Emergency	Patient had pneumonia when admitted to hospital.
30	25	Married	1st	Poor	Poor	Satisfactory	Booked Emergency	Premature labour, patient had pneumonia when admitted to hospital.
31	31	Married	6th	Poor	Poor	Poor	Booked Emergency	Premature labour, patient had pneumonia when admitted to hospital.
32	29	Married	3rd	Poor	Poor	Satisfactory	Booked Emergency	Premature labour, patient had pneumonia when admitted to hospital.
36	36	Married	5th	Poor	Poor	Nil	Booked Emergency	Terminal broncho pneumonia.
46	31	Married	1st	Poor	Fairly Good Poor	Satisfactory	Booked Emergency	Patient had pneumonia on admission to hospital.
61	40	Married	9th	Poor	Poor	Nil	Booked Emergency	Patient had pneumonia on admission to hospital.
64	25	Married	3rd	Poor	Poor	Nil	Booked Emergency	Premature labour, patient had pneumonia on admission to hospital.
66	31	Single	8th	Poor	Good	Satisfactory	Booked Emergency	Pneumonia developed 3 days after delivery.
69	27	Married	2nd	Poor	Poor	Inadequate	Booked Emergency	Died undelivered at 26th week, Landry's paralysis, terminal pneumonia.
80	33	Married	7th	Poor	Poor	Nil	Booked Emergency	Died undelivered at 26th week, pneumonia on admission to hospital.
88	34	Married	2nd	Poor	Poor	Satisfactory Nil	Booked Emergency	Premature labour, pneumonia on admission to hospital, Severe heart disease, terminal pneumonia, undelivered at 30 weeks.
94	22	No partu- lars available						

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## Cardiac Disease.

				2nd	1st	Poor	Fair	Satisfactory	Emergency	Booked	Emergency	Chronic mitral disease, secondary anaemia.
8	23	Married	Married									
13	24	Married	Married									

			Poor	Satisfactory	Emergency	
29	36	Married	5th	1st	Premature labour, acute mania, myocardial degeneration.	
40	19	Married	1st	3rd	Mitral stenosis.	
73	32	Married	5th	2nd	Abortion 22 weeks, mitral stenosis.	

		Fairly Comfortable	Poor	Poor	Nil	Emergency
		Poor	Poor	Adequate	Booked	—
		Poor	Poor	Adequate	Booked	—
		Poor	Poor	Poor	Booked	—

### Chronic Renal Disease.

35	17	Married	1st	Poor	Fairly Good	Satisfactory	Emergency	Premature labour, pyelo nephritis.
42	35	Married	3rd	Poor	Poor	Adequate	Booked	Undelivered at 18 weeks, chronic pyelo nephritis.
62	24	Married	2nd	Poor	Poor	Satisfactory	Booked	Died undelivered, acute parenchymatous.
63	37	Married	2nd	Poor	Poor	Satisfactory	Booked	Premature labour, chronic interstitial nephritis.
67	42	Married	5th	Fairly Comfortable	Poor	Inadequate	Emergency	Undelivered at 36 weeks, pyelo nephritis.

### Unclassified.

10	34	Married	2nd	Fairly Comfortable	Poor	Inadequate	Emergency	Severe secondary anaemia, premature labour.
22	32	Married	4th	Poor	Poor	Satisfactory	Booked	Epilepsy, premature labour.
27	22	Married	2nd	Poor	Very Poor	Satisfactory	Booked	Premature labour, pulmonary tuberculosis.
43	44	Married	9th	Poor	Poor	Inadequate	Booked	Premature labour, acute atonic dilatation of the stomach.
47	30	Married	3rd	Comfortable	Fairly Good	Satisfactory	Booked	Acute hydramnios, cardiac failure.
83	39	Married	7th	Poor	Good	Satisfactory	Emergency	Pernicious anaemia.
93	23	Married	1st	Fairly Comfortable	Good	Satisfactory	Booked	Massive collapse of lung.

### Ophthalmia Neonatorum.

*Inflammation in the eyes of the newly-born.*—The definition adopted for the purpose of dealing with this disease is that used in the rules issued by the Central Midwives Board, governing the practice of midwives, namely, in the section relating to the child, “Inflammation of, or discharge from, the eyes, however slight.” It is considered advisable, therefore, to include inflammation of all degrees of severity in the term “Ophthalmia Neonatorum.” The following figures give some details as to the source of information and character of the cases dealt with during the year :—

The number of cases brought to the notice of the department during the year was 691, which consisted of :—

Mild cases ... ... ... ... ... ... ...	585
Severe cases ... ... ... ... ... ...	106
	—
Total ...	691
	—

These cases were dealt with as follows :—

Number treated in the homes by special nurse ...	289
„ attended at hospital as out-patients and treated by special nurse ... ... ...	70
„ admitted to hospital ... ... ...	27
„ treated by medical attendants and special nurse ... ... ... ...	130
„ treated by medical attendants alone ... ...	126
„ treated and cured in hospital ... ...	48
„ removed (unable to trace address) ... ...	1
	—
	691
„ of cases brought forward from previous year..	29
	—
Total ...	720
	—

Number of cases cured ... ... ... ...	686
„ died under treatment ... ... ...	8
„ under treatment at 31/12/36 ... ...	26
	—
Total ...	720
	—

In addition to the above, 36 cases notified were not cases of ophthalmia neonatorum.

Arrangements have been made with the City Bacteriologist to examine the discharge in every notified case of inflamed eyes in the newly-born. This enables a prompt verification of the disease to be determined.

No. of notifications.	Cases from which specimens were examined by the City Bacteriologist and at St. Paul's Hospital.	No. of cases of positive Gonorrhoea.	Percentage to total cases examined.	Percentage to total notifications.
691	82	18	21·9	2·6

The total number of visits and re-visits paid in respect of the above cases was 5,057.

During the year there was one case of congenital defect.

A very important part of the scheme for dealing with this disease is the provision at St. Paul's Eye Hospital of five beds and cots for the reception of infants with their mothers, where the former can be under the immediate care of ophthalmic surgeons and nurses during the acute stage of the disease. During the year 23 babies were admitted with their mothers.

### Nursing Homes.

*Midwives and Maternity Homes Act, 1926. Nursing Homes Registration Act, 1927.*—During the year four applications for registration were received by the Town Clerk. After careful investigation of the premises and practice of the applicants, these were approved by the Maternity and Child Welfare Sub-Committee and registered. Nine registrations were cancelled, in six cases owing to removal, and in two cases because the keeper of the nursing home desired to give up practice, and one was cancelled owing to the death of the keeper. Four were cancelled and re-registered—three at a new address and one because of a re-arrangement of the home. No further exemptions other than those already granted were applied for.

The Nursing Homes on the register at the end of the year numbered 47, the approximate number of beds being 265.

Babies born in Nursing Homes during the year numbered 585, including 6 twin births.

#### **Visits of the Staff of the Midwifery Department to Special Cases.**

These cases are not classifiable in any of the sections so far considered and include visits to women suffering from venereal disease, visits paid to cases of puerperal pyrexia and puerperal sepsis, cases of weaning, maternal mortality, etc. Such visits during 1936 numbered 1,723.

#### **THE HEALTH VISITORS' DEPARTMENT.**

This work is carried out by a staff of trained health visitors.

The work of the health visitors comprises the following :—

- (1) Ante-natal or pre-maternity clinics for expectant mothers.
- (2) Clinics for children up to five years of age.
- (3) Instruction classes at the above clinics in cutting out, sewing, knitting, etc.
- (4) Visiting in the homes under the Notification of Births Acts, 1907 and 1915.
- (5) Home-visiting in connection with the ante-natal and post-natal clinics.
- (6) Home-visiting of children up to five years of age to advise generally on their care and feeding.
- (7) Home-visiting of pre-school children in relation to defects, e.g., to arrange, in conjunction with the School Medical Department, for treatment of squint, otorrhœa, orthopædic defects, etc.
- (8) Visiting under Children Act, 1908, and Children and Young Persons Act, 1932.
- (9) School medical inspection (see page 105).
- (10) School Clinics—minor ailments and special ailments.

- (11) Home-visiting in connection with school medical work.
- (12) Cleansing of school children.
- (13) Special visits :—
  - (a) Phthisis in women and children.
  - (b) Measles, whooping cough and pneumonia.
  - (c) Infantile diarrhoea.
  - (d) "House to house" inspection.
- (14) Other special visits in connection with :—
  - (a) Aged and infirm people.
  - (b) Prevention of cruelty to children.
  - (c) Provision of fireguards.
  - (d) Relieving officers.
  - (e) Admission to Day Nurseries.
  - (f) Certain areas in which infantile diarrhoea is likely to occur.
  - (g) After care of children under 1 year of age discharged from Alder Hey Hospital and Olive Mount Hospital.
  - (h) Supply of milk to expectant and nursing mothers and children.
  - (i) Voluntary agencies.
  - (j) Other special enquiries.

### **Ante-Natal Clinics.**

Experience has shown that conditions productive of a high rate of mortality among mothers point also to a high rate of morbidity, which is, unfortunately, not calculable by available statistics. Among the arrangements for the care and supervision of expectant motherhood ante-natal clinics have a large place.

In Liverpool there are 24 centres at which 55 ante-natal clinics are held weekly. Of these clinics, 15 are under the auspices of the Liverpool Maternity Hospital, two are held at the Royal Infirmary, four at Walton Hospital, five at Mill Road Infirmary, three at Smithdown Road Hospital, three are administered by the Child Welfare Association, and the remaining 23 by the Maternity and Child Welfare Sub-Committee. At the ante-natal clinics, specialised examination is provided, for the most part, by consultant obstetricians.

Classes for mothers are held at the ante-natal clinics in rotation. At these classes the mothers are advised on the preparation for their confinements, hygienic maternity clothes for themselves, and suitable cot, bedding and clothing for the coming infant.

The attendances at classes held by the health visitors at Corporation ante-natal clinics amounted to 6,907.

Treatment, except of a minor or preventive character, is not given. Patients in need of treatment are referred to private medical practitioners or, if necessary, to a suitable hospital. Milk is provided for expectant mothers on a doctor's order.

Expectant mothers come to the clinics from many sources, as will be seen by the following table which refers to the Municipal Clinics, Liverpool Transferred Hospital Clinics, Royal Infirmary Clinic, the Liverpool Maternity Hospital Clinics, Child Welfare Association and the Royal Liverpool Babies' Hospital, Woolton.

Voluntary attendances	...	...	...	...	...	5,546
Sent by midwives	...	...	...	...	...	3,816
Recommended by friends	...	...	...	...	...	1,928
Return cases	...	...	...	...	...	4,845
Sent by medical practitioners	...	...	...	...	...	1,356
,, health visitors	...	...	...	...	...	251
,, hospitals	...	...	...	...	...	290
,, relieving officers	...	...	...	...	...	25

All ante-natal clinics (including municipal and voluntary clinics).

Total new cases	...	...	...	...	...	18,057
Total attendances	...	...	...	...	...	93,306

It is interesting to note that approximately 85 per cent. of the mothers visited by the health visitors, under the Notification of Births Acts, attend the ante-natal clinics.

Mothers who stay at home for their confinements and have no women relations or friends to assist them in their housekeeping are very grateful for the provision of a home help. Home helps are women who can take the place of the housewife in the home, and cook, clean

and attend to the children. They are provided by the Women's Service Bureau, Gambier Terrace. This organisation also provides maternity bags and sterilised accouchement sets, which are a great boon to very poor mothers and to those who unexpectedly bear twins. Midwives are encouraged to visit the homes of their patients and to investigate carefully the arrangements for confinement. Where these conditions are unsatisfactory, every effort is made to rectify them at once.

*Post-natal examination of recently confined mothers.*—Mothers are encouraged to attend the ante-natal clinics after the birth of the infant has taken place. This is for the purpose of examination to ascertain the existence of any morbid condition which might have occurred owing to the confinement. Such lesions, if left untreated, may give rise to much disability and suffering later.

#### **Child Welfare Clinics (for Children up to five years of Age).**

Child welfare clinics have a three-fold aim. First, to instruct mothers in the care and feeding of infants and young children; second, to supervise the progress of the young child and to prevent, as far as possible, unnecessary illness due to ignorance of mothers; and third, to assist in restoring the mother to health and in establishing natural feeding. Talks are given to mothers on hygiene, and classes are held at which instruction in knitting, cutting out and making children's clothes is given.

Attendances at Municipal Maternity and Child Welfare Clinic classes numbered 14,551 during the year.

It will be noted that these clinics do not in any sense take the place of a hospital, dispensary or private doctor's consultation. Accessory foods, such as cod liver oil, emulsion, and so forth, are given on a doctor's order at cost price. In the case of infants whose mothers are unable to breast-feed them, Tuberculin-tested milk or dried milk may be ordered by the clinic doctors. (A fuller account of this subject comes under the section dealing with milk depots.)

The sources of admission to the child welfare clinics are similar to those of the ante-natal clinics, but mothers having once attended an infant clinic frequently attend as a matter of course with each succeeding child.

The value of the mother's attendance at a clinic is increased by visits to her home which are paid by the health visitor, who has either registered or weighed her baby or taken notes of the doctor's advice at the clinic.

Children who have been seen by the doctor at a clinic are visited in order to ascertain if the doctor's instructions are understood and are being properly carried out.

The following figures give the number of children admitted to the various child welfare clinics in the city :—

Admissions during the year	...	...	...	...	12,522
Total attendances	...	...	...	...	193,311

There are 23 centres at which 60 sessions are held per week.

The percentage of attendances amounted to 59·37 of the births.

#### **The Health Visitors' Work carried out in the Homes.**

Visiting in the homes under the Notification of Births Acts has been carried out since 1907 in Liverpool. This establishes contact with the mother and child as soon as the puerperium is over and follows on the attendance of the doctor or midwife or on the patient's discharge from hospital. At this time, advice is given and the mother (or child) referred to her own doctor or to an infant clinic.

Visits in this connection are continued periodically, whether the child attends a clinic or not. Notes are made on the general progress and children are referred for appropriate treatment for defects, when required.

Home visiting is a necessary adjunct to the ante-natal, post-natal and child welfare clinics. Frequently the directions and advice given in the clinic are not clearly understood by the mother and require further explanation. This is best given informally in the home. The home conditions are sometimes found to be inimical to the welfare of the child or even of the whole family, and it is only by a careful investigation of the circumstances that suitable corrections can be made.

It is noted elsewhere in this report that infantile diarrhoea is much less prevalent now than in former years. To a large extent this is due to the careful visiting in the early part of the year of homes and areas likely to be affected, so that householders may be warned of the danger of flies and advised as to methods adopted for their destruction.

All notified cases of measles, whooping cough and pneumonia nursed at home are also visited by members of the health visiting staff. Appropriate assistance is given, either in the actual nursing of the child or in arranging for its efficient isolation from other members of the family.

The health visitors' duties in connection with the School Medical Department are very extensive and include attendances at the schools during the routine school medical examinations, concentration visits to schools, attendance at all school clinics and clinics for the treatment of special defects, e.g., defective vision, aural troubles, enlarged tonsils and adenoids, and ringworm.

By arrangement with the School Medical Department, pre-school children—that is those under the age of school attendance—suffering from defects of eyes or ears or from orthopædic defects may receive treatment and advice at the School Medical Department's special clinics. During 1936, 443 children under five years of age were referred for special treatment to this department summarised as follows:—

Defective vision	...	...	...	...	...	251
Otorrhœa	...	...	...	...	...	95
Orthopædic defects	...	...	...	...	...	97

Home visits were paid in each case, and all the children were found to be unable to obtain the necessary treatment from private practitioners on account of poverty, or from hospital out-patient departments on account of the already long waiting lists, necessitating loss of time and consequent risk of irremediable defects. (Further details of the work of the health visitors are given in the report of the School Medical Officer, which is separately printed.)

### Statistics Relating to Home Visits.

Visits to expectant mothers by health visitors ... ... 6,356

*Visits under the Notification of Births Acts, 1907-1915.*

Number of births visited during the year ... ... 17,965

Re-visits to births during the year ... ... 67,681

Re-visits to infants of 1 year to 5 years of age ... ... 91,603

*Visits paid to homes of nurse children under Part I of the Children Act, 1908, and Children and Young Persons Act, 1932* ... ... ... ... 1,067

*After care visits to children under one year of age discharged from Municipal Hospitals:—*

Visits to 371 cases from Alder Hey Hospital ... ... 1,030

„ „ 230 cases from Olive Mount Hospital ... ... 612

*Visits to cases of infectious disease, etc.*

Visits to cases of measles (first visits, 7,719) ... ... 11,894

„ „ whooping cough (first visits, 51) ... ... 162

„ „ pneumonia ... ... ... ... 757

„ „ infantile diarrhoea ... ... ... ... 579

Number of visits paid to schools ... ... ... ... 10,580

„ „ hours spent in schools ... ... ... ... 20,382

„ „ children inspected in schools ... ... ... ... 46,079

„ „ re-inspections in schools ... ... ... ... 247,245

„ „ dental inspections in schools ... ... ... ... 68,960

„ „ home visits to cases of physical defects ... ... ... ... 7,212

„ „ home visits to neglected and verminous school children ... ... ... ... ... 18,067

„ „ home visits to school children suffering from infectious skin diseases, etc. ... ... ... ... 251

*Attendance at Minor Ailments Clinics, and Eye, Ear, Tonsils and Adenoids, Dental, Scabies and Ringworm Clinics.*

Number of visits to school clinics ... ... ... ... 11,087

„ „ hours spent at school clinics ... ... ... ... 39,519

„ „ attendances at school clinics ... ... ... ... 421,009

### Rickets Enquiry.

So many cases of rickets coming to the notice of the Public Health Department suggested that a special enquiry might, with advantage, be made into the mode of living of the children affected. Consequently, all rachitic children who were sent to the Carnegie Welfare Centre for artificial sunlight or for admission to the wards, were the subject of careful enquiry. The total number of cases was 244.

This report deals with only a limited number of existing cases, but it serves to throw into prominence not only the established tenets as to the cause and prevention of rickets, but the fact that much closer supervision of early infancy is necessary and that much more attention should be paid to the education of mothers in matters concerned with the evil consequences of rickets and its prevention and cure.

In the severe type, regular attendance at the clinics is shown in only two cases. The tendency of severe cases of rickets to respiratory and infectious illness would account for a good deal of non-attendance, but it was also noted that very few of these children attended the clinic sufficiently early to allow of measures being taken to ensure a healthy infancy and childhood under conditions of home life which tend to act adversely on the child's well being.

The lack of regular provision, from early infancy, of cod liver oil, which is one of the most convenient and successful methods of administering the anti-rachitic vitamin, is clearly shown to be a factor influencing the incidence of rickets.

Investigation has also brought to light the important point that, in the large majority of breast-fed infants, the mother's diet and health have been poor, facts which tend to react adversely on the nutrition of the child.

The following table illustrates these points:—

					Severe Type.	Moderate Type.	Early Type.
NO. OF CASES	...	...	...	...	9	57	178
<b>BREAST FEEDING :—</b>							
Nil or under three months...	...	...	...	...	33½%	33½%	42·6%
Over three months	...	...	...	...	66½%	66½%	57·4%
ARTIFICIALLY FED	...	...	...	...	22%	3·5%	8·9%
<b>FRESH AIR AND GOOD CONDITIONS :—</b>							
Satisfactory ...	...	...	...	...	—	28·0%	42·6%
Unsatisfactory	...	...	...	...	100%	72·0%	57·4%
<b>ILLNESSES :—</b>							
Respiratory ...	...	...	...	...	22·2%	26·2%	26·4%
Infectious ...	...	...	...	...	33·3%	36·8%	35·3%
<b>ATTENDANCE AT A CHILD WELFARE CLINIC :—</b>							
Regular	...	...	...	...	—	15·9%	31·5%
Irregular	...	...	...	...	—	50·8%	52·8%
Nil	...	...	...	...	100%	33·3%	15·7%
PROVISION OF COD LIVER OIL :—	...	...	...	Nil	71·7%	80·2%	

### Administration of Part I of the Children Act, 1908.

(a) Number of persons receiving children for reward on the Register at the end of the year 1936	...	...	...	157
(b) Number of children on the Register				
(1) at the end of the year	...	...	...	205
(2) who died during the year (in homes)	...	...	...	2
(3) on whom inquests were held during the year	...	...	...	1
(c) Proceedings taken during the year	...	...	...	Nil

### Neo-natal Mortality.

During the year the number of deaths of children under 28 days old (Neo-natal Deaths) amounted to 579, equal to a rate of 33 per 1,000 live births registered.

Special enquiry was made into the deaths of all these newly-born children, i.e., those under 28 days old.

The causes of these deaths at ages under each week are set out in the Infant Mortality Table at the end of this Report (see Appendix D).

Premature birth is responsible for more than half the total number of deaths of infants during the neo-natal period. In the majority of cases, it has not been possible to assign definite causes of prematurity. Seasonal influence appears to have no bearing on the occurrence of deaths in any of the above-mentioned groups. It will be noted, however, how few of the total deaths occur at this early age from gastro-enteritis or diarrhoea.

#### **Deaths from Diarrhoea and Enteritis. Results of Enquiry.**

Enquiries were made into 128 of the deaths recorded. In a few instances the parents could not be traced.

In 14 cases there was a predominant history of wasting or marasmus. In 2 cases the onset of enteritis had been preceded by an attack of pneumonia or bronchitis; in 4 instances, where deaths were ascribed to enteritis, there was no diarrhoea; congenital conditions accounted for 3 deaths. In 13 cases the infant was known to have been premature; in 32 cases the infant was said to have been delicate from birth.

Fourteen deaths were of infants under 28 days old (Neo-natal deaths), the ages being as follows:—

Under 7 days	...	...	...	...	1
7 and under 14 days	...	...	...	...	6
14 „ „ 21 „	...	...	...	...	4
21 „ „ 28 „	...	...	...	...	3

Acute intestinal infections are uncommon at these early ages, when the child is almost invariably breast-fed.

*Other Associated Diseases.*—Apart from the respiratory diseases, 2 in number, referred to above, the following conditions were present, and in most cases were the cause of the child's admission to hospital, enteritis being a terminal condition.

Prematurity	...	...	...	...	13
Nephritis	...	...	...	...	1
Acute otitis media	...	...	...	...	5
Peritonitis	...	...	...	...	2
Glioma	...	...	...	...	1
Tetany	...	..	...	...	1
Convulsions	...	...	...	...	19
Mastoiditis	...	...	...	...	1
Operations	...	...	...	...	4

It seems almost certain that these various conditions played a large part in causing the deaths of the infants.

*Maternal Illness or Death.*—The care of the mother is so essential to the wellbeing of the newborn child that it is not surprising that in 14 cases the serious illness or death of the mother was followed by the death of the child (illness of mother, 12 cases; death of mother, 2 cases).

Severe illness of the mother invariably involved the weaning of the child.

*Social Conditions.*—Eight of the children were illegitimate. In 62 cases the home conditions and storage of food were unsuitable, in 42 cases the father was unemployed and in 3 cases the parents were separated.

*Methods of Feeding.*—The majority of the children were artificially fed in whole or in part. Artificial feeding if not carefully carried out not only predisposes the child to a fatal infection, by rendering it more susceptible, but provides the medium, usually milk, by which the infection is conveyed. Classified according to the methods of feeding, the cases were :—

Entirely breast-fed	...	...	...	...	19
Mixed breast-fed and artificially	...	...	...	...	92
No history obtainable or inadequate information					8
Artificially fed entirely	...	...	...	...	9
					—
Total	...	...	...	...	128
					—

See also pages 70-73 for further details relating to diarrhoea and enteritis.

### Carnegie Welfare Centre.

The Carnegie Welfare Centre has now completed 13 years as a most useful and educational welfare centre in the city.

During 1936 the work of former years has been carried on, but with an increased number of attendances in many departments.

Child welfare clinics are held on four afternoons per week, and one ante-natal clinic is held each week. The attendances at the clinics have shewn an increase each year on those of the year preceding. The classes for knitting, sewing, etc., have also been well attended.

*Observation Wards.*—The number of infants admitted during 1936 was 117, and the reasons for admission were:—

1. Failure to make normal progress	...	...	...	...	...	...	...	53
38 improved.								
9 taken home for medical treatment at home.								
1 still under treatment.								
3 died								
2 transferred to isolation hospital.								
2. Infantile Dyspepsia	...	...	...	...	...	...	...	4
1 cured.								
3 died.								
3. Rickets	...	...	...	...	...	...	...	48
36 improved.								
7 taken home for private medical attention.								
5 still under treatment.								
4. Observation Cases	...	...	...	...	...	...	...	12
12 sent home well.								
							Total ...	117

The average duration of stay in the wards has been 42·2 days, but the actual time has varied from a few days to several weeks.

#### *Ultra-violet irradiation clinic.*

Three sessions are held each week. During the summer months the numbers attending were reduced, but on the onset of the colder weather, numbers rapidly increased.

Only those rachitic children definitely non-surgical are treated. Those admitted to the wards give better results on the whole than those

attending as out-patients. (No inference of any value can be drawn from this fact, as cases are taken as they are sent from the clinics, and no control observations can conveniently be made).

The children who are classed under the heading of "Lack of normal progress" are those in whom no very definite cause for their failure to gain weight normally is apparent. Occasionally the condition is dated from some previous illness or even from weaning. It is frequently due to poverty, mismanagement, neglect, or overcrowding with resultant conditions of defective hygiene. Occasionally some latent infection is responsible, and more often than not a combination of adverse conditions is found.

New cases during 1936	...	...	...	...	...	...	...	566
Attendances	...	...	...	...	...	...	...	7,906
Still under treatment	...	...	...	...	...	...	...	66
<i>Rickets</i>	...	...	...	...	...	...	...	228
149 good results.								
22 poor results.								
57 discontinued treatment before the course was completed.								
<i>Failure to make normal progress</i>	...	...	...	...	...	...	...	191
132 good results.								
23 poor results.								
36 discontinued treatment.								

### Dental Clinics.

Four Dental Clinics are held weekly for expectant mothers, nursing mothers and children up to five years of age. Three of these clinics are municipal and one is a voluntary clinic.

#### Attendances at all clinics :—

New cases	...	...	...	...	...	...	...	1,110
Ante-natal and post-natal mothers	...	...	...	...	...	...	...	923
Children	...	...	...	...	...	...	...	187
Number of extractions	...	...	...	...	...	...	...	3,671
,, fillings	...	...	...	...	...	...	...	10
Total attendances	...	...	...	...	...	...	...	2,291

### \*Maternity and Rest Home.

#### "Quarry Bank," 162 Hawthorne Road.

The accommodation of the home, which was closed on 31st August, 1936, consisted of two wards, together with an emergency ward and two isolation wards, and a labour ward, containing 18 beds in all.

The statistics relating to the treatment of patients in the home during the year 1936 were as follows:—

Total number of cases admitted ... ... ...	166
Number of women confined in the home ... ...	143
,, pre-maternity cases ... ... ...	22
,, post-natal cases ... ... ...	1

The average duration of stay was 15 days.

Of the 143 cases of labour conducted in the home, the patients, with the exception of one maternal death and two cases of puerperal sepsis, made a good recovery. The normal cases numbered 124, and the cases of complicated labour were 19. Six patients were transferred to the Liverpool Maternity Hospital for caesarean section. Of the total number of cases, 93 were primigravidæ. Former patients admitted for a second confinement at the home numbered 31, for a third time 5, and for a fourth time 1.

Of the 147 babies born in the home, 146 were born alive and 1 was still-born. In the case of the still-birth the cause of death was prematurity.

Of the 146 babies born alive, none died within 10 days of birth.

The 22 pre-maternity cases were admitted on account of various complications associated with pregnancy, such as albuminuria, bacilluria, heart disease, varicose veins, contracted pelvis, and raised blood pressure.

No case of pemphigus but one case of ophthalmia neonatorum occurred in the home during the year.

#### *Source of Patients admitted to the Home.*

Sent in by friends ... ... ...	99
,, midwives ... ... ...	7
,, medical practitioners ... ...	1
,, from clinics ... ... ...	8
Referred from hospital ... ... ...	14
Return cases ... ... ...	37

During the year 105 patients attended the ante-natal clinic for the first time, and the total number of attendances was 671, the average per week being 20·3.

### DAY NURSERIES.

The Day Nurseries in Liverpool are 6 in number, 4 of which are under the control of the Maternity and Child Welfare Sub-Committee. Children from the age of one month to five years are admitted, and may remain from 7 a.m. to 7 p.m. on week-days and 7 a.m. to 1 p.m. on Saturdays.

A daily or weekly charge is made for each child, which is based on an income and expenditure figure. Only the children of mothers who are obliged to work by reason of widowhood, unemployment or incapacity of their husbands, are admitted. The particulars given to the matron on admission of each child are investigated by a call made at the home by the health visitor for the district in which it is situated.

The two voluntary nurseries are administered on somewhat similar lines to those under the control of the Maternity and Child Welfare Sub-Committee.

The total accommodation in the Corporation Day Nurseries is 178 and in the Voluntary Nurseries 126.

#### Statistics relating to Corporation Day Nurseries.

##### NEW ADMISSIONS.

Age.		West-minster Road.	Smith-down Lane.	Gt. George Square.	Garston.
Under 1 year ...	...	18	30	27	21
1 year—2 years	...	26	21	14	30
Over 2 years ...	...	22	38	27	22
<b>TOTAL</b> ...	...	66	89	68	73
Total attendances ...	...	15,877	10,929	9,167	10,173

##### *Condition on Admission.*

Good ...	...	6	30	27	18
Fairly good ...	...	21	27	24	32
Poor ...	...	39	32	17	23
<b>TOTAL</b> ...	...	66	89	68	73

##### *Number of Cases of Illness contracted during the year.*

Infectious ...	...	30	18	32	21
Other illness ...	...	2	8	4	5
<b>TOTAL</b> ...	...	32	26	36	26

### MILK DEPOTS.

The milk which is supplied from these centres and depots consists entirely of Tuberculin-tested milk.

There were 6,775 persons on the books at the beginning of the year, 16,903 admitted during the year, and 5,557 who had milk previously and had been re-admitted, making a total of 29,235. The supply of milk is given on the presentation by the applicant of a note from a doctor, and in a few instances it was allowed on production of written requests from midwives. The following is a statement of cases during the year:—

Centres.	Ante-Natal.	Nursing Mothers.	Infants.		Liverpool Child Welfare Association.	Totals.
			Under 1 year of age.	1 Year and under 2 Years of Age.		
Netherfield Road ...	1,043	1,039	546	104	484	3,216
Earle Road ...	245	516	369	94	177	1,401
Park Road ...	468	496	343	85	286	1,678
Boaler Street ...	460	611	477	72	263	1,883
Holly Street ...	689	737	325	145	380	2,276
Rathbone Road ...	116	837	929	59	78	919
Mill Street ...	126	215	134	47	135	657
Scarisbrick Road ...	425	418	276	50	303	1,472
Agents ... ...	74	8	434	382	2,503	3,401
	3,646	4,377	3,233	1,038	4,609	16,903

The total quantity of milk supplied during the year was 159,068  $\frac{5}{16}$  gallons, and 430,499 bottles were filled. The amount of dried milk supplied was 318,204  $\frac{9}{16}$  lbs.

Total cases on books, January 1st, 1936	...	...	6,775
„ „ admitted during the year	...	...	16,903
„ „ re-admitted during the year	...	...	5,557
 Total supplied during 1936	...	...	29,235
 Remaining on the books at the end of the year	...	...	7,448

Quarterly Average—January, February, March	...	6,835
„ „ April, May, June	...	7,060
„ „ July, August September	...	6,984
„ „ October, November, December	...	7,573

The highest number supplied with milk at one time was 7,766 during the week ended December 4th.

Since the initiation of the scheme in 1901 down to the end of the year 1936, the number of persons supplied with milk has reached a total of 224,114.

On one day in each week mothers attend at the centre in their district for the purpose of reviewing family circumstances, when the supply of milk is continued at the same price, unless the circumstances are improved, when the charge is increased, or if the circumstances are worse than when last reviewed, the charge is lowered.

The number of attendances of persons at the centres during the year for advice, and payment for milk, etc., was 52,417.

The usual grant is for a period of 4 or 6 weeks, in exceptional cases 2 or 8 weeks.

The number of visits paid during the year to children in their own homes by the health visitors attached to the centres in order to see that the children were being properly fed and the milk properly used, was 6,284. From time to time information concerning cases is received from the district health visitors and from clinics.

# TUBERCULOSIS

## TUBERCULOSIS.

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### Notification.

Public Health (Tuberculosis) Regulations, 1930.

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SUMMARY OF NOTIFICATIONS DURING THE PERIOD FROM 1ST JANUARY, 1936,  
TO 31ST DECEMBER, 1936 :—

TABLE I.

Age-periods.	Notifications on Schedule A.												Total Notifications on Form A. (including duplicates.)	
	Number of Primary Notifications of New Cases of Tuberculosis.													
	0-	1-	5-	10-	15-	20-	25-	35-	45-	55-	65-	Total Primary Notifications.		
Pulmonary—														
Males .....	4	14	57	42	53	99	176	135	143	96	31	850	1,044	
Females .....	—	18	46	40	99	134	232	112	57	41	16	795	932	
Non-Pulmonary—														
Males .....	4	50	53	37	27	20	16	10	10	9	2	238	290	
Females .....	3	28	47	28	30	24	21	9	9	3	5	207	249	

Out of a total of 1,645 primary notifications of pulmonary tuberculosis 1,294 were received from private and 351 from hospital practitioners, whilst in the case of non-pulmonary tuberculosis these figures are 214 and 231 respectively, forming a total of 445.

Practically all cases notified under the above regulations are examined by the Tuberculosis Officer, the only exceptions being those cases in which, for some specific reason, exemption from examination is requested either by the patient or the medical practitioner concerned.

### The Notification and Dispensary Registers.

In Table II is shown the number of cases on the notification and dispensary registers at the end of the year, the difference (2,965) between the figures for the respective registers representing the number of patients who, for various reasons, discontinued public treatment under this authority before reaching the "cured" stage. A few notified cases are also included in which the patients have refused to make use of the treatment facilities which are available.

TABLE II

	Pulmonary Tuberculosis.		Non-Pulmonary Tuberculosis.		Totals.
	Males.	Females.	Males.	Females.	
Number of cases on the Notification Register ...	3,172	2,475	1,233	1,291	8,171
Number of established cases on the Dispensary Register	2,122	1,549	763	772	5,206
Difference ... ... ...	1,050	926	470	519	2,965

In Table III is given an analysis of the 2,965 persons whose names are on the notification register but are not on the dispensary register, according to the latest information concerning them.

TABLE III

Whereabouts Known.	Pulmonary Tuberculosis.						Non-Pulmonary Tuberculosis.						Totals.	
	Males.		Females.		Males.		Females.							
	State of the Disease.		State of the Disease.		State of the Disease.		State of the Disease.							
Arrested.	Quiescent.	Active.	Arrested.	Quiescent.	Active.	Arrested.	Quiescent.	Active.	Arrested.	Quiescent.	Active.	Arrested.	2,965	
Totals ... ...	51	288	711	52	244	630	48	184	238	38	238	243		

### Tuberculosis Clinics and Dispensary System.

During 1936 the Tuberculosis Officers have conducted 3,883 consultations, either at the Tuberculosis Clinics or in the patients' homes, in addition to which 2,680 other reports on cases have been rendered to medical practitioners.

A statistical summary of the work of the Tuberculosis Clinics, so far as all cases on the dispensary registers are concerned, is given in Table IV, and in addition there are included a few statistics of a general nature.

TABLE IV.

DIAGNOSIS.	PULMONARY.				NON-PULMONARY				TOTAL.			
	ADULTS.		CHILDREN		ADULTS.		CHILDREN		ADULTS.		CHILDREN	
	M.	F.	M.	F.	M.	F.	M.	F.	M.	F.	M.	F.
A.—NEW CASES examined during the year (excluding contacts):												
(a) Definitely tuberculous ...	530	408	66	51	72	82	113	101	602	490	179	152
(b) Diagnosis not completed ...	—	—	—	—	—	—	—	—	16	22	15	10
(c) Non-tuberculous ... ...	—	—	—	—	—	—	—	—	429	504	367	271
B.—CONTACTS examined during the year :—												
(a) Definitely tuberculous ...	5	5	8	7	—	—	3	1	5	5	11	8
(b) Diagnosis not completed ...	—	—	—	—	—	—	—	—	—	—	—	—
(c) Non-tuberculous ... ...	—	—	—	—	—	—	—	—	83	181	318	317
C.—CASES written off the Dispensary Register as :—												
(a) Recovered ... ... ...	61	65	15	21	23	34	35	25	84	99	50	46
(b) Non-tuberculous (including any such cases previously diagnosed and entered on the Dispensary Register as tuberculous) ... ... ...	—	—	—	—	—	—	—	—	512	685	685	588
D.—NUMBER OF CASES on Dispensary Register on Dec. 31 :—												
(a) Definitely tuberculous ...	1,809	1,295	313	254	262	364	501	408	2,071	1,659	814	662
(b) Diagnosis not completed ...	—	—	—	—	—	—	—	—	16	22	15	10

1. Number of cases on Dispensary Register on January 1st ... ... ...	5,360	2. Number of cases transferred from other areas and cases returned after discharge under Head 3 in previous years ...
3. Number of cases transferred to other areas, cases not desiring further assistance under the scheme, and cases "lost sight of" ... ... ...	886	4. Cases written off during the year as Dead (all causes) ... ... ...
5. Number of attendances at the Dispensary (including Contacts) ... ... ...	18,212	6. Number of Insured Persons under Domi- ciliary Treatment on the 31st December
7. Number of consultations with medical practitioners :— (a) Personal ... ... ... (b) Other ... ... ...	51 3,832	8. Number of visits by Tuberculosis Officers to homes (including personal con- sultations) ... ... ...
9. Number of visits by Nurses or Health Visitors to homes of patients ... ...	31,413	10. Number of :— (a) Specimens of sputum, etc., examined (b) X-ray examinations made in con- nection with Dispensary work. ...
11. Number of "Recovered" cases restored to Dispensary Register, and included in A (a) and A (b) above... ...	13	12. Number of "T.B. plus" cases on Dis- pensary Register on December 31st ...

\* In addition to 3,883 consultations, 2,680 reports concerning patients were sent to medical practitio-

### General Remarks.

The city death rates for the year 1936 for pulmonary and non-pulmonary tuberculosis are 0·82 and 0·14 per 1,000, respectively, making a total of 0·96 per 1,000 for all forms of the disease.

These figures show a slight decrease as compared with the previous year and are the lowest yet recorded for the city but, unfortunately, the rate of decline is slow despite the influence of many factors having a favourable effect upon the incidence and progress of tuberculosis.

Notification by medical practitioners, both in private or other spheres of practice, still constitutes the main channel through which cases reach the notice of the Tuberculosis Officers and it is very satisfactory to note that medical men in Liverpool co-operate so willingly with the tuberculosis department that the number of cases in which notification has been overlooked is small. (See Table XVII.)

It should be more widely realised that examination at a Tuberculosis Clinic is not carried out solely for the purpose of confirming a diagnosis of tuberculosis made elsewhere, but that such an examination aims at discovering the cause of the patient's illness, which may not be of a tuberculous nature at all. It would remove a great deal of dread if the public realised that probably more than 50 per cent. of persons examined (as new cases) at the Tuberculosis Clinics are relieved of all their fears by the elimination of tuberculosis as the causative factor of their symptoms.

**RADIOLOGY.** Increasing use is being made of the X-ray plant in connection with the work of the Tuberculosis Clinics, 1,251 cases having been radiographed during the year. Concentration on greater precision in diagnosis at the Clinics has been the means of excluding many cases which otherwise would have received treatment for tuberculosis, thus overtaxing accommodation in the sanatoria at a time when beds tend to be occupied for longer periods owing to the increasing use of certain therapeutic measures such as Artificial Pneumothorax.

In addition to the above, 3,954 radiographs and 5,634 screenings have been carried out by the radiologist in connection with the treatment and investigation of cases already in sanatoria.

**LIGHT THERAPY.** In accordance with arrangements previously described, 4,347 treatments by Ultra Violet Rays were carried out at Belmont Road Hospital in addition to a total of 7,980 such treatments at the Sanatoria. The conditions treated included Lupus Vulgaris, Lupus Verrucosa, Cold Abscess, Tubercular Joint Disease, and Tubercular Cervical and Mesenteric Glands.

**MANTOUX REACTION.** This intradermal test has been applied in about 639 cases at the Tuberculosis Clinics, and where negative, has been of considerable assistance in diagnosis.

Children under two years of age giving a positive Mantoux reaction, but in whom no other evidence of tuberculosis is found, are regarded as suspects and kept under close observation at the Clinics.

**CONTACTS.** During the year the tuberculosis officers examined 928 persons who are known to have been in contact with infectious cases of pulmonary tuberculosis and found evidence of disease in 29, or 3·12 per cent.

Many cases come to the notice of the tuberculosis officers which only give a short history of illness, but are found on investigation to have extensive disease. This stresses the great importance of the policy of contact examinations which is now being undertaken extensively at the Tuberculosis Clinics, where all contacts are periodically examined so long as an "open" case remains in the household.

### **The Condition of Patients known to the Tuberculosis Officers.**

A statistical return showing in summary form the condition of all patients whose case records are in the possession of the Tuberculosis Clinics at the end of the year, arranged according to the years in which the patients first came under public medical treatment and according to their classification, is given in the two tables, Table V relating to pulmonary cases, and Table VI to non-pulmonary cases.

It is noteworthy that of 1,084 new pulmonary cases whose names were entered on the dispensary register during the year, 596 (55 per cent.) were in a very advanced stage of disease, and by the end of the year, 234 (21·5 per cent.) of the new cases arising during that year were deceased.

in which the patients were first entered on the Dispensary Register as definite cases of pulmonary tuberculosis, and their classification at that time

## **N-PULMONARY TUBERCULOSIS**

ion at the end of 1936 of all patients remaining on the Dispensary Register; and (b) the reasons for the removal of all cases written off the Register.

In Table VII is given a statistical analysis of the patients under dispensary treatment at the end of the year.

TABLE VII.

PATIENTS UNDER DISPENSARY TREATMENT AT THE END OF THE YEAR.

		Pulmonary.	Non-pulmonary.	Totals.
INSURED PERSONS	Males ... ... ...	3	—	3 } 6
	Females ... ...	2	1	3 }
NON-INSURED PERSONS	Male Adults ... ...	20	8	28 }
	Female Adults ...	37	16	53 }
TOTALS	Male Children* ...	30	45	75 }
	Female Children* ...	27	30	57 }
	... ... ... ...	119	100	219

\* Under 15 years of age.

In Table VIII is given a statistical summary of the patients who, not needing active treatment, were under dispensary supervision at the end of the year.

TABLE VIII.

PATIENTS NOT NEEDING TREATMENT WHO WERE UNDER DISPENSARY SUPERVISION AT THE END OF THE YEAR.

		Pulmonary.	Non-pulmonary.	Totals.
INSURED PERSONS	Males ... ... ...	394	76	470 }
	Females ... ...	139	95	234 }
NON-INSURED PERSONS	Male Adults ... ...	204	80	284 }
	Female Adults ...	309	145	454 }
TOTALS	Male Children* ...	216	341	557 }
	Female Children* ...	158	282	440 }
	... ... ... ...	1420	1019	2439

\* Under 15 years of age.

**Home Nursing.**

The domiciliary nursing of both pulmonary and non-pulmonary cases continues to be carried out by the Liverpool Queen Victoria District Nursing Association in accordance with the existing agreement. During the year 1911 150 pulmonary and 92 non-pulmonary cases were

nursed in their homes, and to these cases 10,861 visits were paid. Extremely valuable work has also been performed by the Garston and Grassendale Nursing Association, which has dealt with cases outside the area supplied by the District Nursing Association.

### Domiciliary Treatment.

This form of treatment is arranged where indicated and close co-operation obtains between the medical practitioners and the tuberculosis officers. At the end of the year, 1,425 patients remained under domiciliary treatment of whom 875 were persons insured under the National Health Insurance Act, and in receipt of treatment from their panel doctors and 550 were not insured and were under the treatment of doctors of their own choice. The domiciliary reports received relating to insured persons numbered 3,656, and those relating to non-insured persons numbered 2,954. Table IX shows the position at the end of the year.

TABLE IX.

PATIENTS UNDER DOMICILIARY TREATMENT AT THE END OF THE YEAR.

		Pulmonary.	Non-pulmonary.	Totals.
INSURED PERSONS	Males ... ...	583	31	614 } 875
	Females ... ...	231	30	261 }
NON-INSURED PERSONS	Male Adults ...	173	14	187 }
	Female Adults ...	288	35	323 }
	Male Children*	9	11	20 }
	Female Children*	9	11	20 }
TOTALS ...	... ... ...	1293	132	1425

\* Under 15 years of age.

### Co-operation and Co-ordination.

Close co-operation continues between the Tuberculosis Officers and the School Medical and Maternity and Child Welfare Departments with a view to securing early diagnosis and treatment for the tuberculous child whilst such voluntary social services as the Child Welfare Association, Personal Service Society and the Roll of Honour Fund also render considerable help in this and other directions.

Arrangements also obtain whereby valuable assistance is available at the ante-natal clinics in the case of the tuberculous woman whose lesion is complicated by a co-existing pregnancy.

During the year, 3,147 reports were rendered by the Tuberculosis Officers in respect of school children, and as a result of co-operation with the School Medical Department, a number of non-pulmonary cases were referred for treatment at the special orthopaedic clinics.

### Silicosis and Asbestosis Scheme (1931).

With the approval of the City Council, the Liverpool Tuberculosis Officers are authorised by the Secretary of State to make initial examinations of workmen engaged in occupations which expose them to the dangers of Silicosis or Asbestosis. During the year 14 workmen newly engaged in work of this description were examined, and reports were rendered to the Chief Medical Officer (Silicosis and Asbestosis Scheme).

Twenty-one radiographs were also taken in connection with this Scheme, for which a fee of £1 11s. 6d. per film is payable to the Liverpool Corporation.

A number of cases continue to be referred to the Tuberculosis Officer by the Divisional Medical Officer (Ministry of Health) and the Deputy-Commissioner of Medical Service (Ministry of Pensions).

### Sanatoria.

TABLE X.  
FAZAKERLEY SANATORIUM. Beds, 313.

NORMAL ALLOCATION OF BEDS.

Observation.	Pulmonary Tuberculosis.		Non-pulmonary Tuberculosis.		TOTAL.	
	"Sanatorium" Cases.	"Advanced" Cases.	Disease of Bones and Joints.	Other Conditions		
Adult Males ... ...	2	44	60	45	15	166
Adult Females ...	1	20	58	30	10	119
Children under 15...	1	—	—	20	7	28
<b>TOTAL ...</b>	<b>4</b>	<b>64</b>	<b>118</b>	<b>95</b>	<b>32</b>	<b>313</b>

TABLE XI.

BROADGREEN SANATORIUM. Beds, 340.

## NORMAL ALLOCATION OF BEDS.

	Observation.	Pulmonary Tuberculosis.		Non-pulmonary Tuberculosis.		TOTAL.
		“Sanatorium” Cases.	“Advanced” Cases.	Disease of Bones and Joints.	Other Conditions	
Adult Males ... ...	2	94	80	—	—	176
Adult Females ... ...	2	72	70	—	—	174
Children under 15...	—	15	5	—	—	20
<b>TOTAL</b> ...	<b>4</b>	<b>181</b>	<b>155</b>	—	—	<b>340</b>

## Dental Treatment.

A very considerable amount of dental work is carried out at the Sanatoria, the following operations having been performed during 1936 :—

Extractions under anaesthesia	...	...	1,296
Fillings and scalings ...	...	...	166
Miscellaneous ...	...	...	483

## Special Treatment.

Summary of other special forms of treatment carried out at the Sanatoria during the year :—

Artificial Pneumothorax (New inductions)..	142
Artificial Pneumothorax Refills ...	9,176
Cases treated by Gold Injections ...	382
Thoracic Operations, including Phrenicectomy, Intra-pleural Pneumolysis, Bronchography, Thoracoplasty, etc....	51
Laryngological Operations ...	48

### Walton Hospital.

In this Institution 134 beds are available for cases of tuberculosis, and a close liaison exists between the hospital patients and their respective Tuberculosis Clinics. The constructive co-operation between the Medical Superintendent and the Visiting Tuberculosis Officer has resulted in a very high standard of treatment being attained, and the latest medical and surgical procedures are employed with most satisfactory results.

TABLE XII.

#### ALDER HEY HOSPITAL. Tuberculosis Beds, 100.

This table shows the cases dealt with during the period from 1st January, 1936, to 31st December, 1936:—

	In Alder Hey, 31.12.35.	Subsequent Admissions.	Discharged.	Deaths.	Remaining, 31.12.36.
Pulmonary ... ...	2	27	19	9	1
Non-Pulmonary ...	59	143	95	39	68
<b>TOTALS</b> ...	<b>61</b>	<b>170</b>	<b>114</b>	<b>48</b>	<b>69</b>

The total accommodation in approved institutions made use of for patients suffering from tuberculosis was 1,153 beds, allocated in the following manner:—

TABLE XIII.

#### TOTAL NUMBER OF BEDS NORMALLY AVAILABLE FOR PATIENTS.

	Observa- tion.	Pulmonary Tuberculosis.		Non-pulmonary Tuberculosis.		TOTAL.
		“ Sana- torium ” Cases.	“ Advanced ” Cases.	Disease of Bones and Joints.	Other Conditions	
Adult Males ... ...	4	129	315	42	15	505
Adult Females ...	3	109	175	25	15	327
Children under 15 ...	3	113	4	110	91	321
<b>TOTAL</b> ...	<b>10</b>	<b>351</b>	<b>494</b>	<b>177</b>	<b>121</b>	<b>1,153</b>

The extent of residential treatment afforded during the year is shown in Table XIV.

TABLE XIV.

	In Institutions on Jan. 1st. (1)	Admitted during the year. (2)	Discharged during the year. (3)	Died in the Institutions. (4)	In Institutions on Dec. 31st. (5)
Number of doubtfully tuberculous cases admitted for observation	Adult males	1	23	23	—
	Adult females	—	12	12	—
	Children	4	18	21	—
	Total	5	53	56	—
Number of patients suffering from pulmonary tuberculosis	Adult males	405	744	510	210
	Adult females	259	458	297	134
	Children	115	104	84	17
	Total	779	1,306	891	361
Number of patients suffering from non-pulmonary tuberculosis	Adult males	55	101	94	12
	Adult females	39	97	91	3
	Children	188	282	234	47
	Total	282	480	419	62
GRAND TOTALS ... ...		1,066	1,839	1,366	423
					1,116

A return showing the immediate results of treatment of patients discharged from residential institutions during the year is given in Table XV.

TABLE XV.

Admission to the Institution.	Condition at time of Discharge.	DURATION OF RESIDENTIAL TREATMENT												GRAND TOTAL.			
		*Under 3 months.			3-6 months.			6-12 months.			More than 12 months.						
		M.	F.	Ch.	M.	F.	Ch.	M.	F.	Ch.	M.	F.	Ch.				
	Quiescent ...	14	9	6	14	5	4	14	7	8	5	—	27	47	26	45	113
	Not Quiescent ...	17	15	5	15	4	1	6	5	2	3	2	5	41	26	13	80
	Died in Institution	5	3	3	—	4	—	—	—	—	3	—	1	8	7	4	19
	Quiescent ...	—	—	—	3	5	—	4	3	—	9	2	1	16	10	1	27
	Not Quiescent ...	—	1	1	3	—	1	3	—	—	4	—	—	10	1	2	13
	Died in Institution	—	—	—	—	—	—	—	—	—	1	—	—	1	—	—	1
	Quiescent ...	6	—	—	14	4	—	17	17	1	18	18	—	55	39	1	95
	Not Quiescent ...	53	28	—	42	37	—	40	14	—	30	13	1	165	92	1	258
	Died in Institution	3	2	—	1	—	—	—	1	1	1	1	—	5	4	1	10
	Quiescent ...	—	—	1	—	1	—	2	—	—	1	—	—	3	1	1	5
	Not Quiescent ...	25	15	—	25	9	—	16	10	1	12	9	2	78	43	3	124
	Died in Institution	53	45	3	26	19	1	21	14	—	25	11	—	125	89	4	218
TOTALS (Pulmonary) ...		176	118	19	143	88	7	123	71	13	112	56	37	554	333	76	963
	Bones and Joints.																
	Quiescent ...	—	5	9	4	1	4	5	2	10	7	5	15	16	13	38	67
	Not Quiescent ...	5	4	5	4	—	1	2	2	2	—	1	11	11	7	19	37
	Died in Institution	2	—	1	1	—	—	1	2	3	1	—	—	5	2	4	11
	Abdominal.																
	Quiescent ...	2	—	12	2	—	5	2	1	1	1	—	13	7	1	31	39
	Not Quiescent ...	—	1	5	—	—	2	—	—	1	—	1	2	—	2	10	12
	Died in Institution	1	—	—	—	—	—	—	—	—	—	—	—	1	—	—	1
	Other Organs.																
	Quiescent ...	3	1	2	2	2	1	1	1	2	1	—	—	7	4	5	16
	Not Quiescent ...	1	5	1	1	—	—	—	—	1	—	2	—	2	7	2	11
	Died in Institution	4	—	—	—	—	—	—	—	—	1	—	—	5	—	—	5
	Peripneum. Glands.																
	Quiescent ...	2	6	7	—	1	6	2	5	6	1	1	9	5	13	28	46
	Not Quiescent ...	—	2	15	—	—	2	—	—	1	—	—	1	—	2	19	21
	Died in Institution	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
TOTALS (Non-Pulmonary)		20	24	57	14	4	21	13	13	27	12	10	51	59	51	156	266

NOTE:—Patients whose stay in residential institutions has not exceeded 28 days are no longer to be included in this table.

TABLE XV.—*continued.*

Observation for purpose of Diagnosis.		PULMONARY TUBERCULOSIS						NON-PULM. TUBERCULOSIS						TOTALS		
		Under 4 wks.			Over 4 wks.			Under 4 wks.			Over 4 wks.			M.	F.	Ch.
		M.	F.	Ch.	M.	F.	Ch.	M.	F.	Ch.	M.	F.	Ch.	M.	F.	Ch.
Tuberculous ...		10	4	—	4	4	—	—	—	1	—	—	3	14	8	4
Non-Tuberculous		7	1	—	—	1	4	1	—	5	—	—	4	8	2	13
Doubtful... ...		—	—	—	1	2	2	—	—	1	—	—	1	1	2	4
		17	5	—	5	7	6	1	—	7	—	—	8	23	12	21

**Extent of Residential Treatment provided during the year 1936 in  
Appropriated Institutions not yet approved by the Ministry of  
Health and Public Assistance Hospitals.**

	In Institution on Jan. 1st.	Admitted during the year.	Discharged during the year.	Died in the Institution.	In Institution on Dec. 31
Number of patients suffering from Pulmonary Tuberculosis admitted for treatment.	Adult Males.	4	120	100	19
	Adult Females	2	66	56	8
	Children*	—	—	—	—
	Total	6	186	156	27
Number of patients suffering from Non-Pulmonary Tuberculosis admitted for treatment	Adult Males	—	25	18	3
	Adult Females	—	16	12	4
	Children*	—	—	—	—
	Total	—	41	30	7
Grand Total ...	...	...	227	186	34

\*Under 15 years of Age.

## CLEAVER SANATORIUM. Beds, 200.

Considerable use is being made of this Sanatorium, where there is now a resident medical officer, and admission is no longer confined to the more or less convalescent type of case.

	In Institution on Jan. 1st.	Admitted during the year.	Discharged during the year.	Died in the Institution	In Institution on Dec. 31st.
Number of patients suffering from Pulmonary Tuberculosis admitted for treatment. Children .....	91	51	44	1	97
Number of patients suffering from Non-Pulmonary Tuberculosis admitted for treatment. Children .....	86	54	58	—	82
Grand Total .....	177	105	102	1	179

## After-Care.

The after-care arrangements in force are as follows:—

- (1) The periodic examination by the Tuberculosis Officers of all cases under public medical treatment.
- (2) Visits paid to patients in their homes by the nurses attached to the Tuberculosis Clinics, and by the health visitors and sanitary inspectors employed by the Health Committee.
- (3) Visits paid to patients in their homes by the nurses of the Queen Victoria District Nursing Association.
- (4) The reference of cases presenting peculiar difficulties to voluntary associations, such as the Child Welfare Association, the Personal Service Society, etc.
- (5) When vacancies occur, suitable patients are employed in the continuation treatment sections at the sanatoria.

During the year tuberculosis nurses attached to the clinics and the health visitors and sanitary inspectors made 20,550 such visits. All these visits are the subject of report to the Tuberculosis Officer concerned. The domiciliary visits of the nurses of the Queen Victoria District Nursing Association, to the number of 10,861, have already been referred to.

### **Non-Pulmonary Tuberculosis.**

Table XVI gives an analysis of the 111 cases in which death was due to non-pulmonary tuberculosis.

**TABLE XVI.**  
**NON-PULMONARY TUBERCULOSIS DEATHS.**

1936.	Tuberculous Meningitis.	Bones and Joints.	Abdominal.	Peripheral glands.	Other Organs.	Totals.
Males.....	6	9	4	—	6	25
Females .....	4	4	3	3	5	19
Children .....	46	4	7	2	8	67
<b>Totals.....</b>	<b>56</b>	<b>17</b>	<b>14</b>	<b>5</b>	<b>19</b>	<b>111</b>

### **Notification and Deaths.**

During the year 87 persons within the city died from tuberculosis without notification having been effected prior to death. The result of enquiry into the reasons for such failure to notify are summarised in Table XVII.

TABLE XVII.

Disease.	Number of persons who died within the city.	Number of city deaths not notified before death.	Reasons for Non-notification.			
			Diagnosis made at a post-mortem examination.*	Diagnosis delayed owing to clinical difficulties.	The doctor thought that the case had been notified previously by another medical practitioner.	Notification forgotten.
Pulmonary tuberculosis	722	41 5·6%	21 2·8%	10	4	6 0·8%
Non-pulmonary tuberculosis	112	46 41%	10 8·9%	27	6	3 2·6%

\* Includes Coroner's cases.

Every endeavour is made to encourage early notification of cases of tuberculosis, and Table XVIII gives an analysis of the periods within which notification has been effected.

TABLE XVIII.

YEAR.	Total Number of Deaths Investigated.	Number of Deaths in Cases not Notified or otherwise referred.	Notifications or other References prior to Death within the periods indicated in each column.					
			Within 2 weeks of Death.	Within 2-4 weeks of Death.	Within 1-3 months of Death.	Within 3-6 months of Death.	Within 6-12 months of Death.	Over 12 months prior to Death
Average for 7 years (1923-1929)	... 1,202	233	91	69	163	120	123	400
1929	... 1,137	121	132	52	144	117	109	427
1928	... 1,157	115	127	55	109	95	126	494
1927	... 991	99	100	60	131	96	116	389
1926	... 942	83	92	33	95	97	103	422
1925	... 834	110	87	34	91	86	74	352

\* Includes inward Transferable Deaths returned by the Registrar General, but such deaths are not included in the other columns of the table, which only refer to notifications by doctors in the Liverpool area.

Additional to the deaths which took place within the city boundary, there were 35 deaths from pulmonary tuberculosis taking place outside Liverpool but transferred to Liverpool by the Registrar General. Of these cases 20 had not been notified in Liverpool, but may have been notified elsewhere. Similarly, 5 deaths from non-pulmonary tuberculosis were transferred by the Registrar-General, 3 of which had not been previously notified in Liverpool.

### Deaths from Tuberculosis.

The number of deaths from pulmonary tuberculosis in Liverpool from 1871 to 1936, together with the number of new cases notified and the death rates which prevailed in England and Wales are given in Table XIX.

TABLE XIX.

## DEATHS FROM PULMONARY TUBERCULOSIS.

Years.	Cases notified.	Number of deaths.	Death rate per 1,000 Liverpool.	Death rate per 1,000 England and Wales.
1871 to 1880 .....	Nil	1,506	2.90	2.13
1881 to 1890 .....	Nil	1,260	2.35	1.73
1891 to 1900 .....	Average yearly figures	1,171	1.92	1.39
1901 to 1910 .....	2,216*	1,233	1.68	1.16
1911 to 1920 .....	2,812*	1,214	1.55	1.08
1921 to 1930 .....	2,356	1,042	1.23	0.81
1931.....	2,358	989	1.15	0.74
1932.....	2,005	969	1.12	0.69
1933.....	2,279	1,009	1.16	0.69
1934.....	1,903	867	1.00	0.63
1935.....	1,697	812	0.94	0.60
1936.....	1,645	713	0.84	—

\* Voluntary notification from 1901 to 1911.

# CITY OF LIVERPOOL.

PULMONARY TUBERCULOSIS DEATH RATES PER 100,000 POPULATION.



# CITY OF LIVERPOOL

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In Table XX a similar return is made in respect of deaths from non-pulmonary tuberculosis.

TABLE XX.  
DEATHS FROM NON-PULMONARY TUBERCULOSIS.

Years.	Cases notified.	Number of deaths.	Death rate per 1,000 Liverpool.	Death rate per 1,000 England and Wales.
1871 to 1880 .....	Nil	481	0·90	0·75
1881 to 1890 .....	Nil	527	0·98	0·70
1891 to 1900 .....	Nil	500	0·82	0·63
1901 to 1910 .....	100*	416	0·56	0·50
1911 to 1920 .....	716*	349	0·45	0·35
1921 to 1930 .....	640	234	0·27	0·20
1931.....	719	164	0·19	0·15
1932.....	672	170	0·19	0·15
1933.....	654	148	0·17	0·13
1934.....	585	129	0·15	0·13
1935.....	502	123	0·14	0·11
1936.....	445	126	0·14	—

\* Voluntary notification from 1901 to 1911.

The age and sex distribution of deaths from both pulmonary and non-pulmonary tuberculosis are given in Table XXI.

TABLE XXI.

AGE PERIODS OF DEATHS FROM TUBERCULOSIS DURING 1936.

Age Periods.	PULMONARY.		NON-PULMONARY.	
	Males.	Females.	Males.	Females.
0—	3	1	3	7
1—	3	2	24	14
5—	2	2	6	7
10—	1	9	6	6
15—	19	38	2	7
20—	46	56	8	4
25—	68	80	5	5
35—	91	53	2	2
45—	77	31	3	1
55—	63	25	7	2
65—	29	14	1	4
TOTALS ...	402	311	67	59

The distribution of deaths from pulmonary tuberculosis according to the districts in which the patients resided and according to the quarter of the year during which death took place is given in Table XXII.

TABLE XXII.

## DEATHS FROM PULMONARY TUBERCULOSIS IN DISTRICTS.

DISTRICTS.	QUARTERS.								YEAR 1936		
	March.		June.		Sept.		Dec.				
	M.	F.	M.	F.	M.	F.	M.	F.	M.	F.	M.&F.
Exchange ... ... ...	5	7	12	4	12	2	7	6	36	19	55
Abercromby ... ...	2	1	—	—	4	—	1	3	7	4	11
St. Peters ... ... ...	16	7	8	4	8	3	13	8	45	22	67
Toxteth Park ... ...	12	7	14	4	9	9	10	6	45	26	71
Edge Hill & Sefton Park ...	19	9	18	13	7	6	12	12	56	40	96
Wavertree ... ... ...	9	6	9	4	8	7	5	7	31	24	55
Fazakerley ... ... ...	4	5	3	9	5	8	10	10	22	32	54
Walton & Walton Park ...	11	13	10	4	9	2	12	12	42	31	73
Kirkdale ... ... ...	14	3	9	5	11	7	4	7	38	22	60
Netherfield ... ... ...	9	13	4	5	7	9	7	5	27	32	59
Everton... ... ...	5	4	5	1	4	2	4	6	18	13	31
West Derby... ... ...	10	14	10	9	4	11	11	12	35	46	81
City ... ... ...	116	89	102	62	88	66	96	94	402	311	713
	205		164		154		190		56·4	43·6	
	28·7%		23·0%		21·6%		26·7%		%	%	

N.B.—Deaths in public institutions are transferred to the districts from which the patients came.

A similar return in respect of deaths from non-pulmonary tuberculosis is given in Table XXIII.

TABLE XXIII.

## DEATHS FROM NON-PULMONARY TUBERCULOSIS IN DISTRICTS.

DISTRICTS.	Tuberculous Peritonitis.		Tuberculous Meningitis.		Other forms of Tuberculosis		YEAR 1936.		
	M.	F.	M.	F.	M.	F.	M.	F.	M.&F.
Exchange	...	...	—	—	2	5	3	1	5
Abercromby	...	...	—	—	—	1	—	5	—
St. Peters	...	...	—	—	3	1	—	1	3
Toxteth Park	...	...	—	—	3	3	4	3	7
Edge Hill & Sefton Park	...	...	3	2	2	1	5	7	10
Wavertree	...	...	—	—	3	1	5	3	8
Fazakerley	...	...	—	—	4	3	2	—	6
Walton & Walton Park	...	...	—	—	2	1	2	2	4
Kirkdale	...	...	—	2	2	3	1	1	3
Netherfield	...	...	—	—	3	3	3	4	6
Everton...	...	...	1	1	2	1	3	2	6
West Derby	...	...	—	—	6	—	3	2	9
City	...	...	4 9	5 55	32 55	23 62	31 62	31 67	67 59
									126

N.B.—Deaths in public institutions are transferred to the districts from which the patients came.

**VENEREAL DISEASES**

## VENEREAL DISEASES.

Venereal diseases are a danger to the community owing to the severity of the complications and after-effects. As a result of the Report of the Royal Commission, the Public Health (Venereal Diseases) Regulations were passed in 1916, and came into force in Liverpool in 1917. The object of the regulations was to ensure that the treatment of affected persons should be carried out so as to effect cure and to prevent the further spread of infection. The schemes prepared under these regulations have now had an extensive trial and very good results may be claimed for them.

Close co-operation between the clinics engaged in purely venereal disease treatment has progressed during the year, and the establishment of a large in-patient centre at Mill Road Infirmary has proved a distinct advantage.

All cases of venereal diseases requiring in-patient treatment are now concentrated in the special wards at Mill Road Infirmary. Pregnant women suffering from these diseases are confined there and their own health and that of their new born infants is cared for under expert hands. Periodic examinations of the children born and apparently free from disease are arranged. Infected parents are encouraged to attend the clinics until cure is accomplished. Further pregnancies are supervised and prophylactic treatment for congenital syphilis is given throughout.

It is becoming increasingly realised that the infected unit is not the individual but the family and thus whole families are examined, and, if need be, treated as the result of one diagnosed case. The maternity wards in particular of the various hospitals have referred numerous cases to the clinics for treatment, while the ante-natal centres throughout the city have sent many patients for diagnosis and treatment. It is only by a greater development of this co-operation between the health services that the large numbers of women and their families who would otherwise not be treated for this hidden scourge can come under proper treatment.

Indications of the readiness of persons infected or suspicious of infection to attend the clinics is gauged by—(1) the number of cases classed as non-venereal, e.g., in Liverpool the proportion of non-

venereal cases during the years 1934, 1935 and 1936 has been 19·6 per cent., 23·14 per cent. and 23·18 per cent., respectively; (2) the ratio of male patients suffering from gonorrhœa of less than one year's duration to those suffering from syphilis of less than one year's duration. In the services where concealment of disease is at a minimum the ratio is 7 to 1. In Liverpool the ratio for the year was 8 to 1 [G.1299: S<sub>1</sub> S<sub>2</sub> S<sub>3</sub> 159]. The inference to be drawn appears to be that the fear of venereal disease drives the patient to the clinic for advice and that the clinics are being made use of as diagnostic centres to an increasing degree.

The bugbear of the efficiency of this service to the community continues to be the defaulting patient. Considerable numbers of patients, knowing well the condition from which they are suffering, absent themselves from treatment before non-infectivity to others or safety for themselves is assured. In these diseases, unfortunately, there are long periods when the patient is entirely free from obvious symptoms in spite of the continued presence and internal activity of the disease. It is an unfortunate fact that of 47 patients suffering from locomotor ataxy who came for treatment to the clinic at the Stanley Hospital between the years 1919 and 1933, 44 had not received previous treatment. This would appear to give conclusive evidence that the earlier symptoms of the disease were of a trivial and ephemeral nature. During the year under review 23 per cent. of the female patients attending Mill Road Central Clinic for treatment of syphilis defaulted in spite of at least three letters being sent to each patient asking them to return. Especially distressing is the fact that of the 29 cases of congenital syphilis under 16 years of age registered during the year, only 11 are still attending in spite of repeated letters to the parents asking for their co-operation in bringing the child for attention.

Chancroid is seen commonly at the Seamen's Dispensary (103 cases during the year) but rarely at Mill Road Infirmary Clinic (7 cases during the year) and at the Royal Infirmary (no case during the year). At the Seamen's Dispensary, in fact, the cases of chancroid outnumbered the cases of primary syphilis. This fact is related to the geographical distribution of venereal disease. Chancroid is mainly a disease found in tropical areas such as the Amazon region of South America, and is therefore more prevalent among seafarers than among residents of the city.

The treatment for syphilis in the first year of infection which has been the routine at the Seamen's Dispensary since 1924 is now practised at all centres in the city. Originally 1·05 grams of 914 were given weekly, but since 1928 ·75 grams of 914 have been given. The bismuth dosage has remained the same. The course lasts for six weeks, as shown below:—

Day	1	Cent. Gms.	NAB	90	Cent. Gms.	Bi	20
	4			45			20
	8			30			20
	11			45			20
	15			30			20
	18			45			20
	22			30			20
	25			45			20
	29			30			20
	32			45			20
	36			30			20
	39			45			20

The NAB is dissolved in 15 c.c. of 10% solution of Sodium Thiosulphate.

An interval is given for three months and on return the blood is taken for Wassermann test. All such cases have shown a negative Wassermann at this stage. A further course of six weeks' duration exactly the same as above is given, and a six months' rest from treatment is enjoined. A Wasserman test is taken and the course repeated. Wassermann tests of blood and spinal fluid over a period of five years in every case so treated have shown only one serological relapse, and re-infection in this case could not be entirely ruled out.

The accompanying graph shows the total number of new cases of the two principal venereal diseases year by year.

The Clinics operated by the Corporation during 1936 were:—

Seamen's Dispensary—Males only.

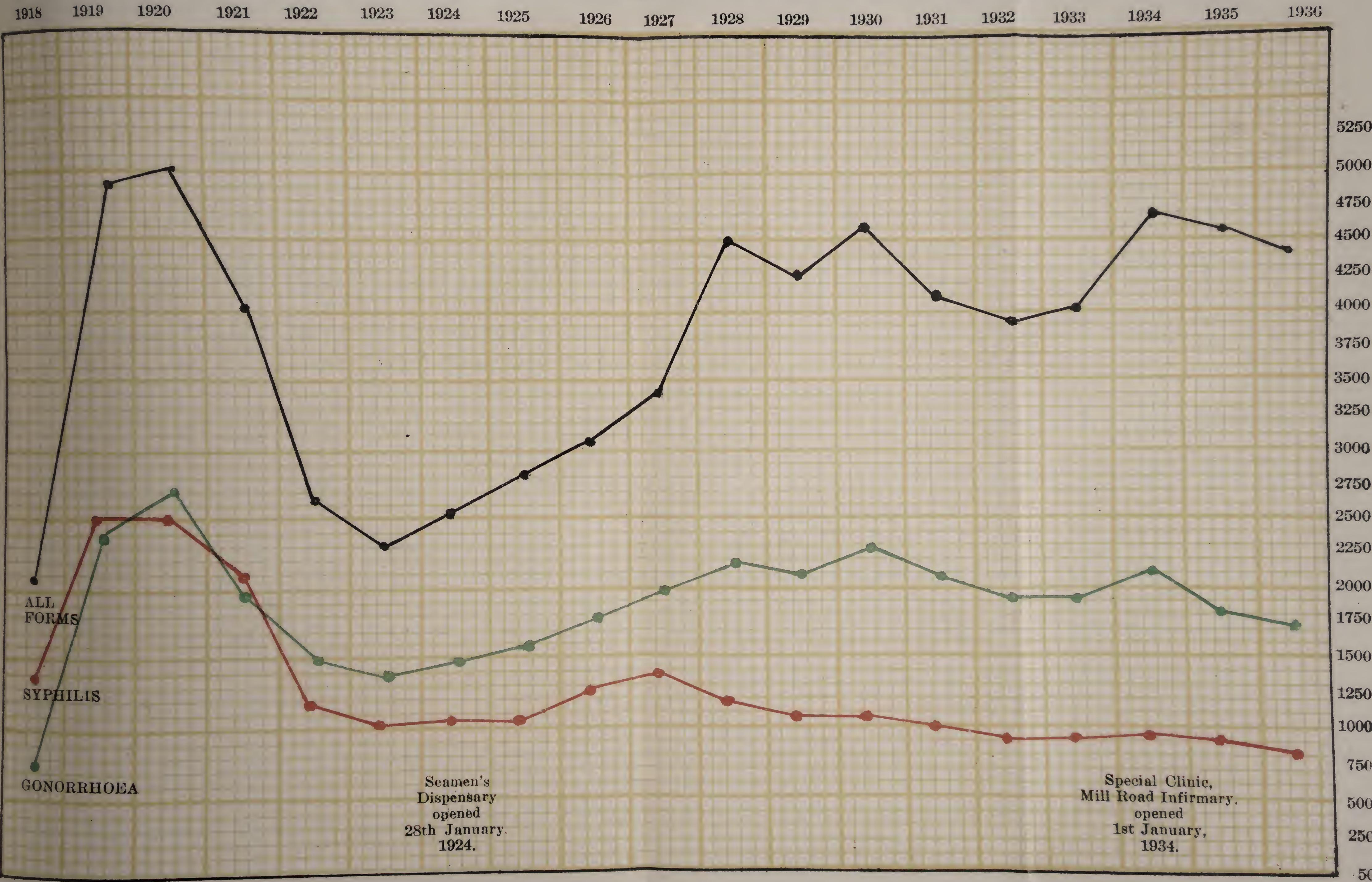
Mill Road Infirmary (Special Clinic)—Males and Females.

Royal Infirmary—Males and Females.

Edge Lane Hospital—Females only.

## CITY OF LIVERPOOL.

## VENEREAL DISEASES. Chart shewing number of New Cases from 1918 to 1936.



4

5

The following table summarises the work of the treatment centres for the year 1936 :—

	Seamen's Dispensary. Males only.	† Royal Infirmary.		† Mill Road Infirmary Spl. Clinic.		† Edge Lane Medical Home. Females only.	TOTAL. Males and Females.
		Males	Females	Males	Females		
New cases ...	1,986	753	189	669	438	82	4,117
<b>Old and new patients</b>							
Total attendances	51,524	45,513	8,959	13,890	16,632	—	136,518
In-patient days	—	61	—	7,166	6,279	6,592	20,098

The Seamen's Dispensary, Mill Road Special Clinic and the Royal Infirmary are open all day for treatment of these diseases in the male, while Mill Road Special Clinic is also open afternoon and evening for females; at the Royal Infirmary treatment for females is provided each day at hours convenient to the greatest number of patients.

Laboratory services for the diagnosis and control of treatment are provided at the City Laboratories, the Thompson Yates Laboratory of the University and the Mill Road Infirmary Laboratory.

At the city laboratory, Wassermann reaction tests are done three times weekly, rapid diagnosis obviating delay in treatment.

### Seamen's Dispensary.

The primary function of this clinic is to provide free and expert treatment for seamen of all nations, to act in an advisory capacity to medical officers of ships, ships' captains, and foreign consulates, and to provide a laboratory service for rapid diagnosis. Although the majority of the patients are seamen, other classes of occupation are also dealt with.

The staff consists of three part-time medical officers and four highly trained orderlies.

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† Beds for In-patients are reserved at these Institutions.

Excellent results have been recorded both in the treatment of gonorrhœa and of syphilis, and special schemes of treatment particularly suited to the needs of the seafaring population have proved efficient.

During the year under review, 3,720 cases have been advised and treated, of whom 2,235 reported for the first time. Of these, 840 were found not to be suffering from venereal disease.

The classification of the cases dealt with at the Seamen's Dispensary for the first time during the year, and also for the five previous years, was as under:—

	1931	1932	1933	1934	1935	1936
Syphilis ... ...	346	293	304	354	380	293
Soft chancre ...	92	106	136	128	131	115
Gonorrhœa ... ...	970	834	918	1,019	968	987
Non-Venereal Cases...	563	440	586	698	780	840
	1,971	1,673	1,944	2,199	2,259	2,235

An analysis of the early cases of venereal disease cases met with at the clinic gives the following result.

Syphilis ... ... ... ... ...	10·38%
Soft chancre ... ... ... ... ...	9·99%
Gonorrhœa ... ... ... ... ...	79·63%

## Services rendered at the Venereal Diseases Treatment Centres during the Year, 1936.

	Syphilis.		Soft Chancre.		Gonorrhœa.		Conditions other than Venereal.		TOTALS.		
	M.	F.	M.	F.	M.	F.	M.	F.	M.	F.	Totals.
1. Number of cases on 1st January under treatment or observation ... ...	940	360	51	...	926	274	23	14	1,940	648	2,588
2. Number of cases removed from the register during any previous year which returned during the year under report for treatment or observation of the same infection ... ... ... ...	216	20	14	...	231	26	...	...	481	46	507
3. Number of cases dealt with for the first time during the year under report (exclusive of cases under Item 4) suffering from:—											
Syphilis, primary ... ... ...	93	10	...	...	...	...	...	...	93	10	103
" secondary ... ...	42	10	...	...	...	...	...	...	42	10	52
" latent in 1st year of infection	24	6	...	...	...	...	...	...	24	6	30
" all later stages ... ...	265	108	...	...	...	...	...	...	265	108	373
" congenital ... ...	31	54	...	...	...	...	...	...	31	54	85
Soft Chancre ... ... ...	...	...	110	...	...	...	...	...	110	...	110
Gonorrhœa, 1st year of infection ...	...	...	...	...	1,299	108	...	...	1,299	108	1,407
" later ... ...	...	...	...	...	76	35	...	...	76	35	111
Conditions other than venereal ...	...	...	...	...	...	...	1,468	296	1,468	296	1,764
4. Number of cases dealt with for the first time during the year under report known to have received treatment for the same infection, or to have been under observation, at other Centres ... ...	156	23	12	...	224	21	...	...	392	44	436
	1,767	591	187	...	2,756	464	1,491	310	6,201	1,365	7,566
5. Number of cases discharged after completion of treatment and final tests of cure or after diagnosis as non-venereal ...	80	12	41	...	680	65	1,468	302	2,269	379	2,648
6. Number of cases which ceased to attend before completion of treatment and were, on first attendance, suffering from:—											
Syphilis, primary ... ... ...	66	10	...	...	...	...	...	...	66	10	76
" secondary ... ...	30	22	...	...	...	...	...	...	30	22	52
" latent in 1st year of infection	8	12	...	...	...	...	...	...	8	12	20
" all later stages ... ...	177	85	...	...	...	...	...	...	177	85	262
" congenital ... ...	16	33	...	...	...	...	...	...	16	33	49
Soft Chancre ... ... ...	...	...	15	...	...	...	...	...	15	...	15
Gonorrhœa, 1st year of infection ...	...	...	...	...	412	67	...	...	412	67	479
" later ... ...	...	...	...	...	43	26	...	...	43	26	69
7. Number of cases which ceased to attend after completion of treatment but before final tests of cure ... ... ...	36	...	14	...	85	12	...	...	135	12	147
8. Number of cases transferred to other centres or to institutions, or to care of private practitioners ... ... ...	445	39	67	...	590	42	1	...	1,103	81	1,184
9. Number of cases remaining under treatment or observation on 31st December ...	909	378	50	...	946	252	22	8	1,927	638	2,565
	1,767	591	187	...	2,756	464	1,491	310	6,201	1,365	7,566
10. Number of cases in the following stages of syphilis (included in Item 6) which failed to complete one course of treatment:—											
Syphilis, primary ... ... ...	15	3	...	...	...	...	...	...	15	3	18
" secondary ... ...	4	3	...	...	...	...	...	...	4	3	7
" latent in 1st year of infection	1	2	...	...	...	...	...	...	1	2	3
" all later stages ... ...	55	37	...	...	...	...	...	...	55	37	92
" congenital ... ...	5	11	...	...	...	...	...	...	5	11	16
11. Number of attendances:—											
(a) for individual attention of the medical officer(s) ... ... ...	15,453	8,651	648	...	27,636	4,485	2,826	604	46,563	13,740	60,303
(b) for intermediate treatment, e.g., irrigation, dressing ... ...	351	20	703	...	63,169	11,831	141	...	64,364	11,851	76,215
TOTAL ATTENDANCES ...	15,804	8,671	1,351	...	90,805	16,316	2,967	604	110,927	25,591	136,518
12. In-patients:—											
(a) Total number of persons admitted for treatment during the year ...	119	108	12	...	109	94	16	41	256	243	499
(b) Aggregate number of "in-patient days" of treatment given ...	3,524	4,956	267	...	3,314	2,709	126	578	7,231	8,243	15,474
	Under 1 year.		1 and under 5 years.		5 and under 15 years.		15 years and over.		Totals.		
	M.	F.	M.	F.	M.	F.	M.	F.	M.	F.	
13. Number of cases of congenital syphilis in Item 3 above classified according to age periods ... ... ... ..	6	4	3	4	4	14	18	32	31	54	

	Arsenical.				Mercury.		Bismuth.	
	Approved Arsenobenzene Compounds.		Others.					
	M.	F.	M.	F.	M.	F.	M.	F.
14. Total number of injections given (out-patients and in-patients) ... ...	9,412		2,541		1,078		11,401	
	Microscopical		Cultural		Serum		Cerebro-spinal fluid.	Others for diagnosis of Venereal Disease.
	for Syphilis.	for Gonorrhœa.	for Gonorrhœa		for Syphilis.	for Gonorrhœa.		
15. Pathological Work:—								
(a) Number of specimens examined at, and by the medical officer of, the Treatment centre ... ...	241	2,921	—	—	—	—	—	—
(b) Number of specimens from patients attending at the Treatment Centre sent for examination to an approved laboratory ... ...	123	7,913	—	6,706	822	417	—	—



City of Liverpool.

**Deaths from Venereal Disease.**

Years.	SYPHILIS.			LOCOMOTOR ATAXY.			GENERAL PARALYSIS OF INSANE.			TOTAL VENEREAL DISEASE.					
	Under 1	1-	40-	Under 1	1-	40-	All Ages.	Under 1	1-	40-	All Ages.	Under 1	1-	40-	All Ages.
1915	43	9	10	62	10	10	11	10	25	35	43	20	45	45	108
1916	36	5	1	42	13	13	14	12	23	35	36	18	37	37	91
1917	25	12	3	259	40	3	16	19	43	70	25	42	62	62	129
1918	37	17	13	67	67	1	19	20	42	76	37	52	74	74	163
1919	38	6	4	48	48	4	12	16	34	56	38	32	50	50	120
1920	48	8	5	61	57	3	10	13	42	53	48	29	39	39	116
1921	41	7	9	57	48	1	16	17	35	56	41	26	62	62	127
1922	31	7	10	255	255	2	16	18	29	47	31	36	55	55	580
1923	39	5	2	46	46	2	15	17	29	47	39	25	46	46	110
1924	29	8	6	43	43	1	15	16	31	46	29	24	52	52	105
1925	24	3	8	35	38	18	18	17	24	32	24	15	46	46	85
1926	25	5	16	35	169	3	11	14	25	40	25	7	52	52	84
1927	14	5	12	28	28	1	12	13	32	36	14	16	59	59	89
1928	10	6	20	33	33	1	15	16	29	36	10	10	14	14	410
1929	10	3	20	33	33	1	15	16	20	26	10	10	10	10	77
1930	10	3	28	41	41	2	9	11	20	25	10	12	55	55	75
1931	5	9	26	40	40	1	7	8	19	32	5	13	49	49	67
1932	6	3	21	30	189	1	9	10	51	131	6	12	54	54	72
1933	4	11	26	41	41	1	20	20	2	28	4	18	67	67	89
1934	8	4	25	37	37	1	2	2	21	27	8	10	10	10	66
1935	7	4	36	47	47	10	10	11	24	7	12	10	64	64	81
1936	4	6	41	51	51	14	14	14	14	4	4	10	74	74	88

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## Venereal Diseases—Time Table of Treatment Centres.

		NEW PATIENTS. MALES.	FEMALES.	CONTINUATION TREATMENT. Males.	Females.
MONDAY	Seamen's Dispensary	9.30 a.m. to 1 p.m. and 3 to 8 p.m.	...	9.30 a.m. to 1 p.m. and 3 to 8 p.m.	...
	Royal Infirmary	10 a.m. to 1 p.m. 5.30 to 6.30 p.m.	2 p.m.	9.30 a.m. to 8 p.m.	2 p.m.
	Mill Road Infirmary	10 a.m. to 1 p.m. and 6 to 8 p.m.	2 to 4 p.m. 6 to 8 p.m.	10 a.m. to 1 p.m. and 5.30 to 8 p.m.	2 to 4 p.m. 6 to 8 p.m.
TUESDAY	Seamen's Dispensary	9.30 a.m. to 1 p.m. and 3 to 8 p.m.	...	9.30 a.m. to 1 p.m. and 3 to 8 p.m.	...
	Royal Infirmary	10 a.m. to 1 p.m.	5.30 to 6.30 p.m.	9.30 a.m. to 4.30 p.m.	2 p.m.
	Mill Road Infirmary	10 a.m. to 1 p.m. and 6 to 8 p.m.	2 to 4 p.m., 6 to 8 p.m.	10 a.m. to 1 p.m. and 5.30 to 8 p.m.	2 to 4 p.m., 6 to 8 p.m.
WEDNESDAY	Seamen's Dispensary	9.30 a.m. to 1 p.m. and 3 to 8 p.m.	...	9.30 a.m. to 1 p.m. and 3 to 8 p.m.	...
	Royal Infirmary	10 a.m. to 1 p.m. 5.30 to 6.30 p.m.	2 p.m.	9.30 a.m. to 8 p.m.	2 p.m.
	Mill Road Infirmary	10 a.m. to 1 p.m. and 6 to 8 p.m.	2 to 4 p.m. 6 to 8 p.m.	10 a.m. to 1 p.m. and 5.30 to 8 p.m.	2 to 4 p.m. 6 to 8 p.m.
THURSDAY	Seamen's Dispensary	9.30 a.m. to 1 p.m. and 3 to 8 p.m.	...	9.30 a.m. to 1 p.m. and 3 to 8 p.m.	...
	Royal Infirmary	5 to 6 p.m.	12 noon to 1 p.m.	9.30 to 11.30 a.m. and 2 to 8 p.m.	2 p.m.
	Mill Road Infirmary	10 a.m. to 1 p.m. and 6 to 8 p.m.	2 to 4 p.m. 6 to 8 p.m.	10 a.m. to 1 p.m. and 5.30 to 8 p.m.	2 to 4 p.m. 6 to 8 p.m.
FRIDAY	Seamen's Dispensary	9.30 a.m. to 1 p.m. and 3 to 8 p.m.	...	9.30 a.m. to 1 p.m. and 3 to 8 p.m.	...
	Royal Infirmary	10 a.m. to 1 p.m. and 7 to 8 p.m.	2 p.m.	9.30 a.m. to 8 p.m.	2 p.m.
	Mill Road Infirmary	10 a.m. to 1 p.m. and 6 to 8 p.m.	2 to 4 p.m. 6 to 8 p.m.	10 a.m. to 1 p.m. and 5.30 to 8 p.m.	2 to 4 p.m. 6 to 8 p.m.
SATURDAY	Seamen's Dispensary	9.30 a.m. to 1 p.m.	...	9.30 a.m. to 1 p.m.	...
	Royal Infirmary	By arrangement	...	9.30 a.m. to 1 p.m.	By arrange- ment.
	Mill Road Infirmary	10 a.m. to 1 p.m.	10 a.m. to 1 p.m.	10 a.m. to 1 p.m.	10 a.m. to 1 p.m.

## Clinics in other Merseyside Areas.

BIRKENHEAD General Hospital	...   ...   ...   ...	Males Mon., Wed., and Fri., 5-30 p.m.	Females Tues., 5-30 p.m. Fri., 2 p.m.
BOOTLE General Hospital	...   ...   ...   ...	Males Mon., 5 p.m. Tues., Wed., and Fri., 6-0 p.m.	Females Wed., 12 noon. Thurs., 5 p.m.
WALLASEY Mill Lane Clinic	...   ...   ...   ...	Males Wed., 7-45 to 8-30 p.m.	Females Mon., 5-30 to 6-30 p.m.

# HOSPITAL AND HEALTH SERVICES.

## INFECTIOUS HOSPITALS and SANATORIA.

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During the year 1936 the City Infectious Hospitals and Sanatoria were in full commission.

At the end of the year the amount of hospital accommodation for infectious cases was as follows :—

City Hospital North	...	...	...	...	187	beds.
„                   South	...	...	...	...	101	„
„                   East	...	...	...	...	174	„
„                   Fazakerley	...	...	...	...	300	„
„                   Fazakerley Annexe	...	...	...	...	150	„
„                   Sparrow Hall	...	...	...	...	160	„
Fazakerley Sanatorium	...	...	...	...	265	„
Broadgreen Sanatorium	...	...	...	...	336	„
Cleaver Sanatorium	...	...	...	...	200	„
					1,873	„

At the City Hospital, Fazakerley, 38 beds are set aside for the treatment of tuberculous patients, in addition to the beds at the Fazakerley Sanatorium.

At the beginning of the year the City Infectious Hospitals were well occupied, there being 380 cases of diphtheria in hospital, which number had increased to 414 by February. This figure gradually decreased to 236 in July, slightly increasing to 286 by September, with an upward tendency towards the close of the year. At the end of December the figure was 389.

The following indicates the position of scarlet fever cases and their removal to hospital throughout the year. At the beginning of the year 110 beds were occupied with scarlet fever cases. In March this figure had increased to 130, gradually diminishing to 60 in August, after which there was a slight increase during September and October. At the end of December the number of cases in hospital was 100.

At the beginning of the year over 200 beds were occupied with measles patients. This figure gradually declined to 100 in April and by July there were only 10 beds occupied with measles patients. At the end of December there were no cases of measles under treatment.

During the year a number of measles cases were treated in their own homes and received daily visits from the measles nurses on the Corporation staff. Where the home conditions were unsatisfactory or at the request of the medical practitioners concerned, the patients were removed to hospital.

There were 58 whooping cough patients in hospital at the beginning of the year, and this number remained steady with slight variations until July, then decreasing gradually until at the close of the year there were only 20 cases of whooping cough in the city hospitals.

Some of the beds at the Walton Hospital and at the Olive Mount Hospital were utilised for the treatment of so-called "minor infectious cases" and this assistance proved very useful in dealing with the large number of cases reported for hospital treatment.

Beds were provided at the various hospitals during the year for patients suffering from the following diseases, viz.:—scarlet fever, diphtheria, measles, whooping cough, enteric fever, erysipelas, cerebro-spinal fever, encephalitis lethargica, anthrax, influenzal pneumonia and chickenpox.

The value of the hospitals, and the immense amount of useful work performed, is shown by the fact that no less than 6,276 patients were admitted during the year.

The Hospitals Committee have agreed with various local authorities to receive cases of infectious disease from districts beyond the city boundary, namely, Waterloo and Seaforth, Great Crosby, Leasowe Hospital, the Children's Convalescent Home, West Kirby, and the Royal Liverpool Children's Hospital, Heswall.

Arrangements have also been made to deal with any case of cholera, yellow fever, or plague, which may arise in any of the neighbouring urban or rural districts. A suitable charge is made in each case.

### Outside Areas and Smallpox.

The question of smallpox cases in neighbouring areas was specially considered by the Port Sanitary and Hospitals Committee in 1928. Arrangements have been in force for some years with most of the local authorities in the district for any cases of smallpox occurring in their areas to be accommodated in Liverpool hospitals.

It has always been recognised that the presence of smallpox in areas adjoining or close to Liverpool is a matter in which the city is vitally interested, as an outbreak of this disease, unless promptly dealt with, might result in the spread of the infection to the Liverpool area, and also do considerable harm to the trading interests of the city and port.

A number of the adjoining local authorities have entered into an agreement to pay a retaining fee each year towards the upkeep of a smallpox hospital, the payment being based on census population. A further charge is made for the maintenance of each patient sent into the hospital for treatment.

The following tables, prepared by the medical staff of each of the city hospitals, show the number of patients admitted, the nature of the illness in each case and the results of treatment, during the year 1936:—

DISEASES.		Remaining Dec. 31st, 1935.	Admitted during the year.	Transferred from other City Hospitals.	Total under Treatment during the year.	Transferred to Convalescent Hospital.	Transferred to other City Hospitals.	Discharged	Remaining at end of year.	Died within 48 hours of Admission.
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#### City Hospital North, Netherfield Road.

Scarlet Fever	...	29	301	4	334	—	1	301	31	—
Diphtheria	...	47	338	10	395	—	1	289	88	1
Measles	...	33	108	—	141	—	—	126	—	2
Whooping Cough	...	—	143	3	146	—	—	119	—	1
Observation cases	...	12	123	3	138	—	2	124	10	—
<b>Totals</b>	...	<b>121</b>	<b>1,013</b>	<b>20</b>	<b>1,154</b>	<b>—</b>	<b>4</b>	<b>959</b>	<b>129</b>	<b>4</b>

## DISEASES.

Remaining  
Dec. 31st, 1935.Admitted  
during the  
year.Transferred  
from other  
City Hospitals.Total under  
Treatment  
during the year.Transferred  
to Convalescent  
Hospital.Transferred  
to other City  
Hospitals.

Discharged

Remaining  
at end of year.Died within  
48 hours of  
Admission.

Total Deaths.

## City Hospital South, Grafton Street.

Scarlet fever	...	...	23	220	1	244		2	217	24	—	1
Diphtheria	...	...	49	314	6	369		1	304	49	3	15
Measles	...	...	24	117	1	142		2	127	—	3	13
Observation cases	...	...	11	144	—	155		1	142	8	1	4
Totals	...	...	107	795	8	910	—	6	790	81	7	33

## City Hospital East, Mill Lane, Old Swan.

Scarlet Fever	...	...	17	81	—	98		1	94	3	—	—
Diphtheria	...	...	141	710	—	851		3	702	97	16	49
Other diseases	...	...	1	18	—	19		—	15	—	3	4
Observation Cases	...	...	3	298	—	301		1	288	12	—	—
Totals	...	...	162	1,107	—	1,269	—	5	1,099	112	19	53

## City Hospitals, Fazakerley.

Scarlet fever	...	...	86	498	24	608	—	16	548	42	—	2
Enteric fever group	...	—	15	—	15	—	—	—	10	5	—	—
Diphtheria	...	...	146	728	43	917	—	28	670	172	10	47
Measles	...	...	91	194	35	320	—	8	281	—	3	31
Whooping Cough	...	...	28	69	9	106	—	14	69	11	3	12
Other diseases	...	...	136	1,168	36	1,340	—	21	1,173	107	14	39
Totals	...	...	487	2,672	147	3,306	—	87	2,751	337	30	131

DISEASES	Remaining Dec. 31st, 1935.	Admitted during the year.	Transferred from other City Hospitals.	Total under Treatment during the year.	Transferred to Convalescent Hospital.	Transferred to other City Hospitals.	Discharged.	Remaining at end of year.	Died within 48 hours of Admission.
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**Fazakerley Sanatorium.**

Tuberculosis	...	...	299	346	22	667	—	—	279	310	1
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**Broadgreen Sanatorium.**

Tuberculosis	...	...	336	290	53	679	—	3	246	343	2
Observation Cases...	...	—	17	—	—	17	—	1	16	—	—
Totals ...	...	...	336	307	53	696	—	4	262	343	2

**Cleaver Sanatorium,**

Tuberculosis	...	...	184	36	27	247	—	12	45	189	—
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**Infectious Disease Hospitals and Sanatoria.**

**Statement of Admissions, Discharges, Deaths, and Transfers.**

Hospital or Sanatorium.	Remaining Dec. 31st, 1935.	Admitted	Transferred to	Discharged	Transferred from	Died.	Remaining Dec. 31st, 1936.
City Hospitals, Fazakerley	...     ...	487	2,672	147	2,751	87	131     337
City Hospital North	...     ...	121	1,013	20	959	4	62     129
City Hospital East	...     ...	162	1,107	—	1,099	5	53     112
City Hospital South	...     ...	107	795	8	790	6	33     81
Fazakerley Sanatorium	...     ...	299	346	22	279	—	78     310
Broadgreen Sanatorium	...     ...	336	307	53	262	4	87     343
Cleaver Sanatorium	...     ...	184	36	27	45	12	1     189
<b>TOTAL</b>	...	1,696	6,276	277	6,185	118	445     1,501

**General and Children's Hospitals and other Institutions.**  
**Statement of Admissions, Discharges, Births, Deaths, and Transfers.**

Hospital or Establishment	Remaining Dec. 28th, 1935	Admitted.	Transferred to	Born.	Discharged.	Transferred from	Died.	Remaining Dec. 26th, 1936.
<b>Administered under the Poor Law</b>								
<b>Acts :—</b>								
Belmont Road Institution	1,160	4,809	745	...	4,665	310	495	1,244
Smithdown Road Hospital	868	9,777	180	1,721	9,602	830	1,284	830
Kirkdale Homes	... ...	1,245	164	398	...	273	189	1,220
Olive Mount Children's Hospital	...	373	1,576	1,186	...	2,446	303	65
Cottage Homes, Fazakerley	...	328	91	182	...	141	86	374
Shaw Street Boys' Home	...	53	31	17	...	66	—	35
Seafield House	...	232	26	2	...	17	8	...
<b>Administered under the Public Health Acts :—</b>								
Walton Hospital	...	1,384	16,094	202	2,570	16,617	507	1,943
Mill Road Infirmary	...	488	9,407	202	1,553	10,066	353	821
Alder Hey Hospital	...	803	8,935	186	...	7,468	1,157	578
<b>TOTAL</b>	...	<b>6,934</b>	<b>50,910</b>	<b>3,300</b>	<b>5,844</b>	<b>51,361</b>	<b>3,743</b>	<b>5,311</b>
<b>CASUAL WARDS—</b>								
Belmont Road...	...	9	3,999	...	...	3,994	...	14

## FAZAKERLEY HOSPITALS.

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During the year, 2,672 patients were admitted to the Fazakerley Hospitals (excluding Fazakerley Sanatorium), a decrease of 998 as compared with the previous year. These admissions were as follows:—

Fazakerley Isolation Hospital	...	...	1,450
Fazakerley Annexe Hospital...	...	...	788
Sparrow Hall Hospital	...	...	434

### **Anthrax.**

Two cases of anthrax came under treatment at the city hospital, Fazakerley, during 1936. One, with an infection near the front of the throat, was very severe, but fortunately recovered. The patient, a Liverpool resident, was a fruit selector employed by a firm of wholesale fruit merchants, and his work necessitated his attendance at the dock sheds where cased fruit was unloaded from ships arriving at the port. The second was a woman from Runcorn. She was occupied entirely in her domestic duties, and at no time came into direct contact with infected hides, wool, or the like, but her husband worked at a local tannery, and it is reasonable to assume that his clothes carried spore infected dust from his work and so to his wife at home. Her case was mild and uncomplicated. Both patients are of interest when the mode of infection is studied. Neither had occasion to handle infected material, but each came into contact with infected dust—the man in the course of his visits to dusty dockside sheds, and the woman, indirectly via her husband's clothing.

In the course of the year, nineteen persons, mainly dock workers and tannery employees, attended at the hospital for investigation as suspected anthrax infections, but in no instance was that disease found. Boils, carbuncles and various localised septic conditions formed the different suspicious lesions. This practice of attendance is encouraged at all times, since it entails almost negligible trouble at the hospital, when balanced against the possibility of an early diagnosis in so serious a disease.

## Cases of Anthrax treated at Liverpool City Hospital, Fazakerley, during 1936.

Series No. continued from 1935	Age	Sex	Occupation	Days ill on admission	Site of Infection	Clinical Notes	Serum injected daily. Each dose expressed in ccs	Complications.
63	35	M.	Fruit selector	3	Side of throat near Adam's Apple	Much œdema, dysphagia and dysphonnia	250 250 250 250 250 250 250	Slow response, secondary spread of infection to root of neck on 3rd day
64	28	F.	Housewife	6	Front of forearm below elbow flexure	No toxæmia, mild localised lesion	180 100	Quickly abated

All serum was injected intravenously. Simultaneously with the serum No. 63 received 0·1 mgm. neokharsivan intravenously on the first day, and 0·45 mgm. on the third day of treatment. No. 64 received only one intravenous dose (0·3 mgm.) of neokharsivan with the first injection of

**HOSPITALS, SANATORIA, AND INSTITUTIONS UNDER THE CONTROL OF THE  
PORT SANITARY AND HOSPITALS COMMITTEE.**

Name of Institution.	Built by	Date of Foundation.	No. of Beds Dec. 31st, 1936.	Original User.	Present User.
Walton Hospital ...	West Derby Union	1864	1,832	General Mixed Institution	General Hospital :— (a) Acute and subacute medical, surgical, gynaecological and special. (b) Adult pulmonary tuberculosis unsuitable for sanatorium treatment. (c) Maternity. (d) Female Venereal Disease. (e) Isolation for minor infectious diseases in children. (f) Nursery for newly born and illegitimate children.
Belmont Road Institution	West Derby Union	1890	1,603	General Mixed Institution	Healthy adults including casuals, aged, infirm, and bedridden men and women. Skin diseases. Casual Wayfarers.
Smithdown Road Hospital	Township of Toxteth Park	1858	1,200	General Mixed Institution	General Hospital. (a) Acute and subacute Medical, Surgical and Gynaecological and special cases. (b) Acute mental disease. (c) Chronic senile dementia (females). (d) Low grade mentally defective children. (e) Female epileptics. (f) Maternity. (g) A few healthy adults.
Kirkdale Homes ...	Liverpool Select Vestry	1843	1,502	School for Destitute Boys	Homes for aged and infirm men and women. Chronic and senile mental diseases (males). Chronic Encephalitis Lethargica. Male Epileptics.
Mill Road Infirmary ...	West Derby Union	1838	762	General Mixed Institution, but present buildings intended only for Hospital use.	General Hospital for acute disease, Medical, Surgical, Gynaecological, Maternity and Special, Male and Female Venereal Diseases.
Alder Hey Children's Hospital	West Derby Union	1914	952	Infirm and Aged	General Children's Hospital. Medical, Surgical, Orthopaedic (including Surgical Tuberculosis).
Olive Mount Children's Hospital	Liverpool Select Vestry	1903	475	Receiving Home for Children, Cottage Homes for Children.	Receiving Home for Children. Nursery for destitute children, 4 years. Acute infectious diseases (Measles, Whooping Cough, and Chicken Pox). Convalescent Children.
Cottage Homes, Fazakerley	West Derby Union	1887	571	Homes for Resident Children	Homes for Resident Children up to 14 years. Hostel for working girls.
Shaw Street Home for Boys	Purchased by West Derby Union	Opened 1913	79	Private House	Home for working boys over 14 years.
Seafield House ...	Leased from Mersey Docks & Harbour Board by West Derby Union	Leased 1912 Renewed 1932	235	Hydropathic adapted for present use	Mentally defective children (mainly imbecile and ineducable of higher grade).
Cleaver Sanatorium ...	West Derby, L'pool, and Toxteth Park Joint Hospital Committee.	1903	200	Pulmonary Tuberculosis	Tuberculosis in Children.
Deysbrook House ...	Purchased by West Derby Union	1911	—	Private Home for Children	Not in use.
Broadgreen Sanatorium	Liverpool Select Vestry	1906	336	Infirm and aged	Sanatorium for Tuberculosis. Male and Female, Adult and Children Pulmonary.
Fazakerley Sanatorium	Liverpool City Council	1920	265	Pulmonary Tuberculosis in Adults	Original use.
Fazakerley Isolation ...	Liverpool City Council	1906	300	All Types of Infectious Disease except Small Pox	Original use, and Tuberculosis, both Pulmonary and mixed Pulmonary and Surgical.
Fazakerley Annexe ...	Liverpool City Council	1901	150	All Types of Infectious Diseases.	Original use.
Sparrow Hall ...	Liverpool City Council	1917	160	Small Pox Hospital	Available for Small Pox, but mainly used for Infectious Diseases.
City Hospital North ...	Dr. Gee ...	1866	187	Infectious Disease	Scarlet Fever, Diphtheria and Measles.
City Hospital East ...	Wavertree Urban District Council	1888	174	Infectious Disease	Diphtheria.
City Hospital South ...	Liverpool City Council	1884	101	Infectious Disease	Scarlet Fever, Diphtheria, and Measles.
			11,084		

## OF THE

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Present User.

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spital :—

, and subacute medical, gynaecological and special cases. (d) Sanatorium treatment for pulmonary tuberculosis. (e) Female Venereal diseases. (f) Isolation for minor diseases in children. (g) Care of newly born and ill children.

Adults including casuals, and bedridden men. Skin diseases. Casual visitors.

Hospital. (a) Acute and Subacute Medical, Surgical and Gynaecological cases. (b) Acute Disease. (c) Chronic septic cases (females). (d) Low grade defective children. (e) Feverish cases. (f) Maternity. (g) Adults.

Aged and infirm men. Chronic and senile men (males). Chronic Encephalitis. Male Epileptics.

Hospital for acute disease. Surgical, Gynaecological, Medical.

## MUNICIPAL HOSPITALS and INSTITUTIONS.

The Hospitals and Institutions under the management of the Port Sanitary and Hospitals Committee number twenty, in addition to the Port Sanitary Hospital at New Ferry. They may be classified as follows :—

(a) Isolation Hospitals and Sanatoria, the property of the Liverpool Corporation prior to 1930	...	...	8
(b) Hospitals transferred under the Local Government Act, 1929, and subsequently appropriated	...	...	4
(c) Hospitals and other Institutions transferred under the Local Government Act, 1929, and not appropriated	...	...	8
			—
Total	...	...	20
			—

A description of these Institutions is appended in the accompanying table.

## GENERAL REVIEW.

During 1936 there were included in the Annual Estimates capital sums for the extension of the hospital buildings as varied subsequently in certain cases by the City Council. The following statement shows the allocation of funds and the progress that has been made.

Nurses' Homes.	£	Position, March 31st, 1937.
Smithdown Road Hospital.	17,680	Completed.
Walton Hospital.	46,250	Completed.
Alder Hey Children's Hospital.	19,000	Completed.
Fazakerley Isolation Hospital.	19,000	Work in progress.
Mill Road Infirmary.	11,000	Negotiations for site.
Mill Lane Hospital.	3,500	Work in progress.
Broadgreen Sanatorium.	3,500	Work in progress.

### Continuation Departments.

Mill Road Infirmary.	22,369	Contract placed.
Walton Hospital.		Plans in preparation.

### Laundry Extensions.

Smithdown Road Hospital.	11,530	Work nearly completed.
Broadgreen Sanatorium.	1,640	New machinery.
Belmont Road Institution.		Plans prepared.

**Boiler House Extensions, etc.**

Belmont Road Institution.

Scheme submitted to Ministry of Health.

**Fazakerley Sanatorium.**

£

Replacement of Recreation Rooms, 5,000 Nearly completed.  
etc.

Treatment Block. 7,500 Work in progress.

**Fazakerley Isolation Hospital.**

Four blocks of cubicles. 20,000 Work in progress.

**Belmont Road Institution.**

Cubicles in Children's Annexe.

Plans approved.

The major portion of this expenditure relates to the provision of additional accommodation for nurses necessitated by the conversion of poor-law institutions into hospitals, the reduction of hours of nursing staffs, and the greatly increased user of hospitals and more rapid turnover of beds. This programme is now well in hand with the exception of Mill Road Infirmary where the need for an extension of the Nurses' Home becomes yearly more urgent. At Alder Hey, Fazakerley, and Mill Lane Hospitals, the extensions provide for recreation rooms for the nurses.

The need for buildings to house the continuation departments at Walton Hospital and Mill Road Infirmary is now imperative, and it is hoped that both these buildings will be begun in 1937. These departments are essential to the economic running of these hospitals by permitting the early discharge of patients where this is practicable.

The re-organisation of the laundries which has been in progress during the last few years is now well nigh completed with the exception of Belmont Road Institution laundry; here the reconstruction of the laundry is tied up with a complete re-organisation of the boiler and heating services which are of an antiquated and piecemeal character and both inefficient and expensive. A complete scheme of re-organisation which is anticipated to show considerable saving has been placed before the Ministry of Health. The re-organisations effected at Fazakerley Hospital laundry have enabled the Sparrow Hall laundry to be closed and that at Fazakerley Annexe to be temporarily closed.



**DETAILS OF ADMISSIONS, DISCHARGES, ETC., AND WORK UNDERTAKEN AT THE FOUR MUNICIPAL HOSPITALS FOR PERIOD 1932 to 1936.**

		WALTON HOSPITAL					SMITHDOWN ROAD HOSPITAL.					MILL ROAD INFIRMARY.					ALDER HEY HOSPITAL.				
		1932	1933	1934	1935	1936	1932	1933	1934	1935	1936	1932	1933	1934	1935	1936	1932	1933	1934	1935	1936
*Admissions ... ... ...	14,958	15,638	15,245	15,809	16,094	7,365	8,559	8,979	9,417	9,777	7,200	8,025	8,200	9,107	9,407	7,129	8,525	7,966	9,870	8,935	
*Transferred to ... ... ...	301	229	222	224	202	403	230	194	167	180	230	95	65	127	202	408	530	637	429	186	
*Born ... ... ...	1,827	1,927	1,976	2,169	2,570	1,127	1,159	1,397	1,482	1,721	990	1,061	1,322	1,549	1,553	—	—	—	—	—	
*Discharged ... ... ...	14,651	15,584	15,209	15,711	16,617	6,872	7,893	8,440	9,013	9,602	7,479	8,224	8,558	9,685	10,066	6,027	6,959	7,102	8,149	7,468	
*Transferred from ... ... ...	669	555	571	458	507	1,122	926	955	800	830	344	215	293	262	353	852	1,371	808	1,247	1,157	
*Died ... ... ...	1,690	1,897	1,782	1,903	1,943	1,015	1,204	1,183	1,294	1,284	609	745	702	830	821	712	810	719	756	578	
Surgical Operations ... ...	2,868	2,993	3,607	3,897	4,345	800	1,077	922	839	1,308	1,927	2,209	2,416	2,787	3,110	1,496	2,242	2,266	2,715	2,612	
Out-Patient Attendances ...	26,563	29,592	33,708	49,017	62,443	9,352	12,016	19,633	27,871	32,731	12,635	32,184	51,341	82,917	92,595	20,048	24,005	32,213	43,748	43,602	
Pathological Examinations ...	22,147	20,630	24,506	29,018	28,742	4,463	5,745	9,160	10,843	14,619	5,425	8,640	17,071	26,145	24,914	2,718	5,611	6,838	12,584	20,085	
Post-mortems ... ... ...	978	1,033	1,109	1,344	1,275	No Record	101	98	84	94	141	176	227	295	347	210	216	92	90	158	
X-Ray Examinations... (Radiographs)	3,685	7,913	17,292	20,181	23,717	2,335	4,457	5,531	8,091	8,549	7,472	8,288	11,008	13,329	11,975	6,204	8,182	8,081	9,983	9,944	

\* These figures correspond with the returns to the Ministry of Health and are made up to the last week-end of each year. This accounts for the slight variation between the figures returned by the respective Hospitals which are for the actual Calendar year.

### Increase of Hospital Services.

The number of persons admitted to the hospitals bears a direct relationship to the prevalence of infectious diseases and influenza which varies from year to year. Epidemics of influenza and measles recur at intervals of approximately two years as a rule, and measles was prevalent during 1935. During 1936 there was again a moderate prevalence of scarlet fever and influenza, and the numbers admitted to isolation hospitals were correspondingly reduced by 598. There was a small increase in the cases of infectious diseases admitted to the transferred hospitals of 148 and a decrease in influenza of 243 patients. Persons suffering from pneumonia or other complications of influenza are admitted to all the hospitals.

Despite the slight reduction of infectious cases, there was an increase in the discharges, etc., from the transferred institutions of 1,774 patients in 1936 as compared with the previous year. The main part of the increase in admissions was on the medical side, diseases of the nervous system increasing by 276, diseases of the skin by 174, and diseases of the circulatory system by 438. The proper investigation by modern methods of such cases makes large calls upon the time of the physicians and also upon the laboratories and the X-ray Departments. There was an increase in the number of mothers and babies amounting to 1,342. There are indications, therefore, that the rapidly-increasing resort to the hospitals has, apart from maternity admissions, again been resumed.

These figures are shown in detail for the four principal hospitals in the accompanying tables. Seven years have now elapsed since the transfer of the general hospitals to the City, and as between 1930 and 1936 there was an increase in the admissions to the four hospitals of 12,175 patients, or 38 per cent. The character of the work carried out has also greatly altered, methods of examination and treatment having been considerably extended. Thus X-ray examinations have advanced from 13,899 to 54,185, an increase of 40,286 or 290 per cent. Pathological examinations have similarly increased from 29,603 to 88,360, an increase of 58,757 or 198 per cent.; the increase is actually greater, both in numbers and character, than is indicated by this figure because at Walton Hospital many examinations formerly carried out in the laboratory are now made in the clinic rooms attached to each division. Further, the appointment of two medical pathologists at Walton and

Mill Road group laboratories has radically altered the nature of the examinations made. Surgical operations have advanced from 5,147 to 11,375, an increase of 6,228, or 121 per cent. In comparison with the previous year there was an increase of 1,137 operations. There has been an alteration in the character of the work, many more acute cases, such as road accidents and other surgical emergencies, being admitted. It is beyond question that such an expansion of the work of the hospitals has made and will make increasing demands upon the medical, nursing and technical staffs of the hospitals. The extensions of staff which have been made have been barely adequate to cope with the increased numbers of patients, and further increases of staff will inevitably be called for in the near future.

### **Maternity Departments.**

The number of births has increased since 1930 from 2,858 to 5,844, an increase of 2,986 births or 104 per cent. The maternity wards were, for the most part, not specially built for this purpose, although certain essential adaptations have been made; many of the ward units being too large. The ante-natal clinics are quite inadequate and are much overcrowded. The character of these units is now under review, and increasing co-operation is being established with the district ante-natal clinics and the midwifery service of the city. Provision is made for an ante-natal clinic in the Continuation Department at Mill Road Infirmary.

Plans have been prepared for a labour suite at Mill Road Infirmary to be built on the cross balcony with an altered allocation of wards for lying-in women. At Smithdown Road Hospital a new building is proposed. Despite the defects just noted admirable work has been done in the maternity units and a very low maternal mortality has to be recorded for the year 1936. The number of deaths of mothers confined throughout in the City Hospitals was 21 or 3·6 per thousand compared with a figure of 3·5 per thousand for the whole city. The figures for the hospitals are heavily loaded by the deaths of patients who were admitted on account of illness complicating pregnancy.

The Minnett gas and air apparatus was used in 2,712 cases with immense relief of suffering.

### **Continuation Departments.**

The number of persons treated in the Continuation Out-patient Departments has again markedly increased. Figures of attendances at these departments are not available for all the hospitals for the whole period of seven years but they have increased from 89,828 in 1932 to 252,556 in 1936, an increase of 162,728 or 181 per cent. in the short period of four years. The transferred hospitals contained no buildings erected or adaptable for this purpose. The new admission and continuation block at Alder Hey Hospital was completed in 1932.

Plans have been prepared by the Land Steward and Surveyor and approved by the Council for a continuation unit at Mill Road Infirmary which will also provide for the ante-natal clinic. A site is available which is occupied by the former steward's house and certain insanitary cottage property which has now been demolished. Here since 1931, the continuation attendances have increased from 5,744 to 92,595. The need for a similar department at Walton Hospital is almost equally pressing, the continuation attendances having increased from 12,845 to 62,443 in the same period; the ante-natal clinic in the maternity unit is quite inadequate for the increasing numbers attending and an ante-natal clinic should be provided in a new building.

There has been a marked increase in the number of eye cases and of dental patients, a considerable and increasing proportion of whom are referred from the Public Assistance Committee. It is hoped that the provision of a dental panel may reduce the number of dental patients.

### **Infectious Diseases.**

The amount of infectious disease fluctuates considerably from year to year. The principal feature of this branch of the hospital services has been the high prevalence of diphtheria in the City since 1930. For the last few years there has been a moderate but steady diminution in the number of cases admitted, and this was continued during 1936. Diphtheria continues to be of the severe type associated with *gravis* and *intermediate* types of the diphtheria bacillus and requiring prolonged treatment in hospital averaging about seven weeks.

During the past year, with the very valued help of the City Bacteriologist, improvements have been effected in the bacteriological

diagnosis of diphtheria. Advances in bacteriological technique made it improbable that patients who present appearances resembling diphtheria, from whom the diphtheria bacillus cannot be recovered, are really suffering from diphtheria. Such patients can accordingly be released from hospital at a much earlier date than would formerly have been permissible, with advantage both to the patient and to the city. As a result of the experience at certain of the hospitals it was found that the diagnosis of diphtheria made before admission was confirmed in 64 per cent. and not confirmed in 36 per cent. of cases.

The number of patients admitted to the Isolation Hospitals during 1936 was 6,276, a decrease of 589 compared with 1935. Wards for measles, whooping cough, etc., are attached to Walton and Olive Mount Hospitals, and notwithstanding this reduction in the prevalence of infectious disease there was an increase of 172 in the numbers of children suffering from these diseases who were admitted to the transferred hospitals during 1936.

The number of cases of measles, which recurs in epidemics at intervals of approximately two years, was high at the beginning of the year having reached a maximum at the preceding Christmas, and placed heavy demands upon the isolation hospital accommodation at that time.

The reduction in the numbers of fever cases permitted some relief to the general and children's hospitals. Throughout the year a ward was occupied at Fazakerley Hospital for the reception of cases of erysipelas. Two of the four ward-blocks at Olive Mount Children's Hospital, formerly occupied by fever cases, were released for the reception of convalescent cases from Alder Hey.

During the prevalence of measles, whooping cough and chicken pox it frequently occurs that children who have diphtheria or scarlet fever and are also suffering from, or have been exposed to, one of these three diseases, are notified to the Health Department for removal. Such cases cannot be admitted into the ordinary wards nor into those used for "bed isolation." The only suitable accommodation for such cases is in separate individual wards or cubicles, failing which the patient must be left at home. The need for additional cubicles for such cases has been felt for some years. During 1934 plans were drawn up and submitted to the Ministry of Health for four blocks of cubicles at

Fazakerley Isolation Hospital, each block to contain 16 cubicles, and these are now under construction.

The use of the 72 cubicles at Alder Hey Children's Hospital was again an unqualified success, and 2,208 children were admitted into them during the year. In view of the frequency of occurrence of cases of infectious diseases in the Children's Skin Hospital at Belmont Road hospital, provision has been made for a similar conversion of 3 wards into cubicles there.

### **Medical Services.**

In previous reports it was indicated that, in order to make the maximum use of the available hospital beds, increases in the medical, nursing and technical staffs were necessary. The advances in medicine and surgery made during the present century have been very great. These advances not only have provided cures for many diseases formerly incurable, but have greatly facilitated the earlier and more accurate diagnosis of many conditions, thus permitting an earlier or more rapid alleviation. Work of this character requires a greater number of resident medical officers and nurses, and calls for the services of specialists in all branches of medicine and surgery and also in the laboratories and X-ray rooms.

During the year the following appointments were made :—

W. S. Diggle, M.Ch. (Orth.), F.R.C.S., Visiting Orthopaedic Surgeon, Walton Hospital.

E. R. Couper, M.B., Ch.B., F.R.F.P.S., Deputy Medical Superintendent Alder Hey Hospital, in succession to Dr. L. Findlay.

A. Martinez, M.D., Deputy Medical Superintendent, Walton Hospital, in succession to Dr. W. S. Diggle.

One additional R.A.M.O. Alder Hey Hospital.

The Medical Officer records with much regret the death of Dr. Osborne, the Pathologist in charge of the Southern Group laboratory at Mill Road Infirmary, which took place in January, 1937, after an illness lasting about a month. He desires to express his obligation to Professor Dible for supervising the work of the laboratory for a period.

### **Diagnostic Services and Equipment.**

The number of radiological examinations has shown an increase from 51,584 in 1935 to 54,185 in 1936.

Considerable increases in the work of the X-Ray departments at Mill Road Infirmary and Walton Hospital, recorded elsewhere in this report, have led to considerable extensions of the plant at a cost of approximately £2,000 and £2,500 respectively. This new plant is now being installed. It includes tilting couches which greatly facilitate the work of the staff and permits direct vision of the radiosscopic appearances with the minimum inconvenience to the patients.

During the year, as the result of some minor accidents to the staff, the question of shock-proofing the apparatus was reported on by the Medical Officer. After discussion with the radiologists a supplementary estimate for shock-proofing the X-ray apparatus throughout the hospitals of £1,231 was approved by the City Council on 2nd December and the necessary alterations are now being made.

The pathological laboratory examinations have risen to 88,360, an increase of 9,770 over the examinations made in the previous year. The increased calls upon the services of the staff in the Southern Hospital Group will call for an additional pathologist at an early date.

### **Nursing Services.**

The increases in the number of operations and in the work of the continuation departments referred to above make additional calls upon the nurses in the hospitals, as do advances in various other departments. In the four principal hospitals, nurses have had to be accommodated in makeshift quarters of varying degrees of unsuitability, and even these annexes do not provide for the requisite number of nurses.

Extensions of the existing nurses' homes were accordingly required at each hospital, and provision was made in last year's estimates for new buildings. The most urgently needed was at Smithdown Road, where a new block which unites the Nurses' Home to the Administrative Block is now completed. The existing accommodation for probationers in the Administrative Block has been remodelled, and dormitories have

been converted into separate rooms. On the completion of this work the occasion was taken to modernise the old portion of the Nurses' Home. This work is now nearly completed. When finished there will be room for 167 nurses and sisters.

The extensions to the Nurses' Homes at Walton Hospital and Alder Hey Children's Hospital to provide 166 and 73 additional beds respectively were completed early in 1937. The Nurses' Home at Walton was opened by the Lady Mayoress on February 25th. The new nurses' home at Fazakerley for the night staff in the Isolation Hospitals and Sanatorium to accommodate 75 nurses, where, also, the nurses are accommodated in various rooms not intended for the purpose, is now in process of erection. These extensions have been completed at the very cheap cost of £263 and £205 per bed respectively.

Small extensions to the Nurses' Homes at Broadgreen Sanatorium and Mill Lane Hospital are in progress. At the City Hospital North plans are being prepared for the conversion of the top floor of an existing building into additional rooms for nurses, and provision will, it is hoped, be made in the estimates for 1937-8. The cost should be small.

At Mill Road Infirmary any extension of the Nurses' Home is dependent upon acquiring a site for building. The site of an adjacent school, which is not up to modern standards, is eminently suitable for this purpose, but the Education Department will require to find a site for the construction of an equivalent building before the existing school can be vacated. It is hoped that a suitable site will shortly become available.

The increase in the number of maternity cases and of the attendances at the ante-natal clinics necessitates corresponding additions to the number of pupil midwives. A considerable proportion of the nurses training in the three general hospitals take the Certificate of the Central Midwives Board. New regulations for the training of midwives have been made by the Board, and the examination for the certificate will from May, 1939 onward be taken in two parts.

The number of nurses and pupil midwives who have completed their training and passed their final examinations at the several hospitals during the year was as follows:—

		General Nursing Certificates	Children's Nurse's Certifi- cates.	C.M.B. Certifi- cates.	Fever and Tuber- culosis Certifi- cates.	R.M. Cer- cate
<b>Walton Hospital</b>	...	59	—	41	—	—
<b>Mill Road Infirmary</b>	...	29	—	18	—	—
<b>Smithdown Road Hospital</b>	...	19	—	32	—	—
<b>Alder Hey Children's Hospital</b>	...	—	27	—	—	—
<b>Group I</b>	...	—	—	—	57	—
<b>Group II</b>	...	—	—	—	34	—

During the year a course in housekeeping and administration for senior nurses was started, training taking place at each of the three General Hospitals and at Alder Hey. Lectures have been given on dietetics by Miss M. W. Grant, B.Sc., and also by Drs. Crosbie and Findlay. An examination will be held at the end of each course, which occupies six months.

### Almoners in Municipal Hospitals.

The transfer of the former Poor Law Hospitals to the management of the Port Sanitary and Hospitals Committee and the subsequent appropriation of Alder Hey Children's Hospital, Mill Road Infirmary and Walton Hospital under the Public Health Acts placed the position of the assessment and collection of the costs of maintenance on a new and different basis. It had been apparent for a number of years that the number of persons admitted to the Municipal Hospitals and Institutions through the Relieving Officers was diminishing, whilst the numbers admitted at the request of the patient's medical attendants was increasing steadily and now formed a considerable majority of the patients admitted to hospital.

It was also felt that many of the persons admitted to hospital were in need of various forms of assistance, after-care, convalescent treatment or the benefit of social assistance which the manifold charitable agencies of the City were able, in suitable cases, to provide.

The time appeared opportune for the appointment of lady almoners who would be capable of carrying out the twofold duties just outlined, and the sanction of the Council was given to the commencement of an Almoner Service to operate from November 1st, 1935. The service was restricted to the General Hospitals and to Belmont Road Institution where a large number of skin patients attending the clinic called for such assistance. Provision was also made for the collection of small payments for out-patient treatment from persons whose means were adequate. The existing system of receptionists was incorporated in the scheme, and collectors were transferred from the Public Assistance Department to the hospitals and to a Central Collecting Office under the City Treasurer.

The following staffs were appointed :—

		Walton Hospital.	Mill Road Infirmary.	Smithdown Road Hospital.	Alder Hey Hospital.	Belmont Road Institution.
Almoners	... ... ...	1	1	1	1	—
Assistant Almoners	... ...	2	1	1	1	1
Collectors	... ... ...	1	1	1	1	—
Receptionists and Clerks	... ...	2	4	3	2	—
<b>TOTAL</b>	<b>...</b>	<b>6</b>	<b>7</b>	<b>6</b>	<b>5</b>	<b>1</b>

The scheme was definitely an experiment, but is parallel to the manner in which the work is being carried out by the London County Council and other progressive local authorities. It is believed that the work is being successfully performed by the staffs both on the financial and the social sides. The service was authorised to be continued for a further period of 12 months in the autumn of 1936 and it is hoped that it will be made permanent.

### Buildings and Equipment.

#### (a) General Review.

The Hospitals and Institutions under the control of the Port Sanitary and Hospitals Committee comprise the buildings transferred from the West Derby Board of Guardians in 1930 and the isolation hospitals

and sanatoria which were built by the Municipality before that date, all the latter—with the exception of Fazakerley Sanatorium and the temporary hospital at Sparrow Hall—being constructed before the war.

The buildings transferred from the Guardians were, with the exception of Mill Road Infirmary and Cleaver Sanatorium, constructed mainly for the reception of healthy or merely aged and infirm persons. Occasional buildings, such as portions of Smithdown Road Hospital, were built for the reception of the sick. It had been apparent for a considerable time that the number of sick, of women entering hospital for confinement, and of bed-ridden infirm, was steadily increasing, and this increased user of the buildings as hospitals has advanced rapidly since the transfer as shown in previous sections of this report. The principal requirements were for extensions of Nurses' Homes, for Continuation Departments, and for Maternity Wards.

To cope with this increased need for hospital accommodation of non-infectious cases, the Board of Guardians had, in the years succeeding the war, carried out an extensive internal reconstruction of Walton Workhouse, which converted it into the largest general hospital in this country. This reconstruction, however, was by no means complete, and in order to render it adequate for its present use certain new buildings, as well as internal re-arrangements, had still to be built. The buildings required were a Nurses' Home, an Admission and Continuation Department, and a Maternity Building. The New Nurses' Home, which was opened by the Lady Mayoress on February 25th, 1937, was the first of these to be completed. Plans for the Admission and Continuation Department and for certain replacement buildings have been prepared.

At Mill Road Infirmary the urgent needs are for a Continuation Department and an extension of the Nurses' Home. Plans for the former have been approved by the Ministry of Health.

The Nurses' Home extension can only take place when a site is available and this site has not yet been acquired. The provision of wards for maternity cases is a difficult matter, owing to the lack of land for a new building, but after very careful consideration plans have now been drawn up which will, if approved, provide the essential need of a labour suite with some isolation accommodation both of which, at present, are quite inadequate.

At Smithdown Road Hospital an admission and continuation department, and an extension of the Nurses' Home have already been carried out. There is need for a Central Stores which will not only permit a number of separate departments to be brought together with better supervision and economy of transport, but will enable certain rooms at present occupied by these departments, to be liberated for administrative and hospital purposes, for which no other space is available. The construction of a new Maternity Building has for some time received the consideration of the Committee. The suite of wards known as the "Old Corridor" is not suitable for modernisation, and at some future date will require replacement by modern buildings.

Alder Hey Children's Hospital, although built to receive infirm adults, had the advantage of being a modern building completed during the war and has now an Admission and Continuation Department. The construction of an extension of the Nurses' Home, completed early in 1937, completes the major part of the re-organisation of this hospital, which is one of the finest children's hospitals in this country. A building for the replacement of the splint shop and certain other small extensions to replace temporary wooden buildings were approved during 1936.

The four hospitals just discussed are for the reception mainly of acute cases and those chronic or incurable cases which require considerable medical or nursing care. Chronic sick, bed-ridden infirm, and senile patients are received in the two Institutions, at Belmont Road and Kirkdale Homes. The greater longevity of the population, referred to on page 24, leads to a need for 50 or 60 additional beds per annum for this class of patient, and the conversion of one block from the occupation by healthy adults to that of the sick is requisite to meet this extending need. During 1936 the "X" block at Belmont Road was so converted for chronic male patients by plastering wards, formation of bath and sluice rooms, etc.

Belmont Road Institution, having been constructed for healthy adults, with 3-storey blocks and only a ground floor corridor is unsuitable for conversion to general hospital purposes, but is sufficiently capable of adaptations for bed-ridden patients. The system of heating is from four separate groups of boilers, and the wards and corridors

are mainly unheated or inadequately heated. The heating will require to be entirely overhauled, and a scheme for this purpose was prepared by a consulting engineer and referred to the Ministry of Health during 1936.

Kirkdale Homes consists of a main building and annexes of varying age and adaptability. The Romney Road Block is the most modern in construction and is well adapted for senile and defective persons. With a moderate amount of alteration the rest of the Homes can be rendered suitable for the ageing men and women received there. There are, in the West Block, a number of epileptic men who would be more suitably housed in rural surroundings. The kitchens should be modernised and more day-rooms provided. Little has been expended on this Institution since it was transferred.

The Isolation Hospitals, unlike the Transferred Institutions, are used for the purpose for which they were constructed and do not require the same amount of adaptation. Owing to the shortening of the hours of nurses, extensions in the Nurses' Homes are needed as in the General Hospitals. At the Fazakerley group a joint building to house the night nurses in the Isolation Hospital, Annexe, and Sanatorium, is now under construction. At Mill Lane Hospital plans for an extension have now been approved. At the City Hospital North there is no room for extension, but it is hoped that an adaptation of an existing building may serve the purpose.

The main necessity for the Isolation Hospitals has been the provision of cubicles for the separate isolation of patients suffering from certain combinations of infections, and other patients requiring separate isolation. Such provision will permit of the fullest use of existing wards. Four blocks of cubicles, each containing sixteen individual cubicles, are now under construction and will be completed in 1937. Certain temporary buildings providing recreational and occupational facilities for the Sanatorium patients had to be removed to clear the site, and two buildings are nearly completed in or adjacent to the Sanatorium grounds for men and women respectively.

Sparrow Hall Isolation Hospital, with 160 beds, was constructed during the war as a semi-permanent building for the reception of smallpox patients. The making of the East Lancashire Road and the

building of the Norris Green Housing Estate has rendered its location entirely unsuitable for this purpose and the "high-rib" style of building gives a relatively short life. The Fazakerley Annexe Hospital is suitably placed for the reception of smallpox should an epidemic occur, and it is hoped that it may be possible in the next few years to evacuate Sparrow Hall Hospital and liberate the site for housing. It has proved impossible to evacuate it without some counterbalancing provision.

The Fazakerley Annexe Hospital Wards with one exception are built of wood and should be replaced by buildings of fireproof construction. Some years ago one of these wards was completely destroyed by fire in a period of little more than half an hour.

Two of the three Sanatoria, namely, Fazakerley Sanatorium and Cleaver Sanatorium, were built for the purpose and the pavilion type of construction at Broadgreen Sanatorium renders the buildings suitable for its present use. The construction of a dining room for patients and the re-organisation of the laundry and power plant have already been effected and have led to economy in working. An extension of the Nurses' Home is now in progress.

The Cleaver Sanatorium, being of modern construction, has required little alteration. An extension of the Nurses' Home is completed, and plans for the provision of a rest-room—as essential an item in the working of a children's Sanatorium as it is in an open-air school—are now completed.

At Fazakerley Sanatorium, the principal need has been the building of a treatment block to provide for the advances in thoracic surgery which have been made since the Sanatorium was built. The treatment block now under construction will be entirely suitable for this purpose. The kitchen requires modernisation, and provision is made in the estimates for 1937 for this purpose. For many years, cases of pulmonary and surgical tuberculosis have been housed in two wards in the Isolation Hospital. If the Sparrow Hall Hospital is to be closed at an early date it has been apparent that the two wards in the Isolation Hospital will be required for infectious cases. The most suitable method would, therefore, be the provision of "hospital" wards for "advanced" and "surgical" cases in the Sanatorium.

It may be pointed out that the advances in the treatment of tuberculosis in the last twenty-five years have permitted cure or very great alleviation in cases that would formerly have been regarded as progressive in type. Consequently the period of stay in hospital or sanatorium has become considerably extended in these patients. A proportion of patients can be rehabilitated by working under colony conditions for which the extensive grounds at Fazakerley provide adequate space.

**(b) Work carried out in 1936.**

At Smithdown Road Hospital the building of the Nurses' Home is now completed. Progress has been made with the reorganisation of the laundry, which it is hoped will be completed early in 1937.

At Belmont Road Institution a further house-block was converted for ward use for old and bed-ridden patients, and opened early in 1937.

At Walton Hospital the new Nurses' Home Block was commenced and will be completed early in 1937. This building will permit the nurses, who are at present occupying a number of rooms constructed for other purposes, to be properly housed, and will also liberate a house-block for occupation by infirm or chronic patients.

The appropriation of Walton Hospital under the Public Health Acts released some house rooms which were converted to other purposes, such as Almoner's Office, bedrooms for Resident Medical Officers and Isolation Cubicles. Further conversions to cubicles have been made in the past year.

A much-needed improvement has been the provision of a waiting-room for visitors at the entrance lodge. This provides shelter for visitors waiting to enter the hospital and also for those waiting for trams.

A new passenger lift and service lifts have been installed at Walton.

The Nurses' Home at Alder Hey has now been completed and provides an additional 73 beds. The nurses have, in many cases, been living in overcrowded conditions, which have been detrimental to health. A number have also been housed in a temporary wooden building erected during the War for a physio-therapy department. The new building also includes a flat for the matron and, with the release of rooms at

present occupied by her, it will be possible to provide for the medical staff who at present occupy quarters originally provided for the domestic staff, etc. The scheme provides for the building of an additional floor in the residential quarters.

### Laundries.

The greater resort to the hospitals leads to greater demands upon the laundries. A more rapid turnover of the patients leads to an increase in the washing of bed linen even without any increase in the number of beds occupied. There is also an increase in the staff laundry owing to increases in the nursing and clinic staffs, and the greater use of overalls for bed-isolation and cubicle nursing has a similar effect. Increased admissions of bed-ridden and incontinent old people follow upon the increasing longevity of the population. All these influences have affected the work of the laundries, and for certain purposes special plant is required.

An efficient laundry must be of adequate size to justify the complete equipment of machines. The flow should be continuous and unidirectional from the point of entry of the soiled linen to the sorting room. The calenders should be adequate in size and drying power to dry the clothing in one passage without any reversal of the flow. Some classification of the laundries in relation to the articles washed is desirable.

During 1934 it was decided that the washing from Mill Road Infirmary should go to Walton Hospital and that from Kirkdale Homes to Belmont Road Institution in order that materials of comparable nature should be washed together. This alteration is not, however, possible without complete reorganisation of the Belmont Road Institution laundry, which is, in any case, required as it is badly arranged and largely equipped with out-of-date machines.

The efficiency of the several laundries is, other things being equal, reflected in the prices per 1,000 articles washed. The character of the washing, however, such as the size and nature of the articles washed, varies considerably from one laundry to another. The retention of out-of-date machinery in the laundries probably accounts for much of the differences in cost and is very uneconomical. Walton Hospital laundry is probably the best equipped and as the number of articles

washed approaches five million per annum, this is reflected in the cost per 1,000 articles. The laundry at Broadgreen Sanatorium is structurally adequate for a much larger turnover than is actually dealt with, some of the machinery is, however, antiquated, but with further replacements it should become a very efficient unit, and should eventually be capable of washing 1,500,000 articles per annum.

Considerable progress has been made with the reorganisation of the laundry at Smithdown Road which will cost about £11,530. The calenders, dryers and presses are in position and the belt-conveyor will complete the reorganisation of the laundry, which will then be equipped throughout with modern machinery with a continuous and unidirectional flow from entrance to exit thus establishing an efficient unit. The output should be considerably increased, and this laundry should then be capable of dealing with the washing from one of the smaller isolation hospitals.

The reorganisation of the Belmont Road Laundry is becoming increasingly necessary, but this cannot be put in hand until the re-equipment of the Smithdown Road Hospital laundry is completed.

Provision is made for laundry machinery, including a dryer, at Walton Hospital in replacement of apparatus now out of date.

At the Fazakerley Isolation Hospital the laundry machinery has now been brought up to a modern standard after considerable replacement. The laundry as modernised is now able to receive the washing from the Sanatorium and also from Sparrow Hall Hospital; the laundry from the Fazakerley Annexe has been washed in Fazakerley during the greater part of 1936.

With the completion of the alterations now in progress it should be possible to close some, or all, of the laundries at the three smaller isolation hospitals should the Committee desire to take this course. It is proposed to close the laundry at Netherfield Road Hospital during 1937.

The following table shows the existing and future capacity of the City Hospital laundries and their average weekly load:—

			Present Avereage User.	Present Weekly Capacity.	Maximum Capacity after Extension.
Walton Hospital	...	...	96,000	110,000	112,000
Smithdown Road Hospital	...	...	41,000	45,000	55,000
Belmont Road Institution	...	...	40,000	51,000	65,000
Broadgreen Sanatorium	...	...	16,000	20,000	35,000
Fazakerley Isolation Hospital	...	...	20,000	27,000	34,000
<b>Total</b>	<b>...</b>	<b>...</b>	<b>213,000</b>	<b>253,000</b>	<b>301,000</b>

It would appear from the figures that when the Belmont Road Laundry reorganisation is being carried out, it will be possible to carry the load among the other laundries.

### Tuberculosis.

There was again a considerable reduction in the number of cases of tuberculosis admitted into the Sanatoria and hospitals during 1936 compared with the preceding year, the numbers admitted falling from 842 to 689. The number of cases of tuberculosis admitted to the Transferred Hospitals shows a reduction of 7 compared with 1935, and there was a reduction of 153 in the number of cases admitted to the Sanatoria. This reduction in admissions corresponds to a genuine reduction in the number of cases and of deaths. The reduction in non-pulmonary tuberculosis, especially in children, is particularly marked and has permitted a concentration of these cases at Alder Hey Hospital; a certain number of glandular and abdominal cases have been received into the Cleaver Sanatorium. Any further reduction in surgical tuberculosis in children will enable the children's block at Fazakerley to be freed for the reception of severe pulmonary cases. One of the two wards at Broadgreen Sanatorium, formerly occupied by children, has been released for the use of adults.

The number of pulmonary cases in adults also shows some reduction in admissions in recent years corresponding with the reduction in numbers of notified cases. The diminution in numbers received has been offset by an increase in the average length of stay. Contrary to what holds good in the General Hospitals this increased duration of stay

points to greater efficiency in the methods of treatment available and given. The greater use of collapse therapy methods such as the induction of artificial pneumothorax, has alleviated cases formerly intractable; the prolongation of stay is an indication of prolongation of life in many cases. The direction of progress on these lines is towards the greater use of surgical methods. The completion of the treatment block at Fazakerley Sanatorium containing a new operating theatre and two small wards adjacent to the X-ray building will enable these methods to be used under the most favourable conditions. At Broadgreen Sanatorium it is proposed to enclose the pathway between the operating theatre and the nearest male and female wards in order to permit patients to be treated under more favourable circumstances.

One of the most distressing conditions is the form of tuberculosis of the skin known as lupus. The opening of the Lupus Clinic at Belmont Road Institution provides adequate and efficient treatment available for the patients suffering from this condition. Early cases of lupus can now be cured without deformity, and the progress of old-standing cases completely arrested in a considerable number of instances. The treatment is prolonged in old-standing cases.

At Cleaver Sanatorium there is urgent need for the provision of a rest-room where the children can lie down during the middle of the day. Such a rest-room is regarded as an essential provision in an open-air school and is even more requisite in a sanatorium for the treatment of tuberculosis.

CLASSIFICATION OF IN-PATIENTS WHO WERE DISCHARGED FROM OR WHO DIED IN TRANSFERRED INSTITUTIONS DURING THE YEAR ENDED 31ST DECEMBER, 1936.

Disease Groups.	1936.														1935										
	SMITHDOWN ROAD.		WALTON.		MILL ROAD.		ALDER HEY.		OLIVE MOUNT.		KIRKDALE HOMES.		BELMONT ROAD.		SEAFIELD.		CLEAVER SANATORIUM.		TOTAL.		GRAND TOTAL				
	Discharged.	Died.	Discharged.	Died.	Discharged.	Died.	Discharged.	Died.	Discharged.	Died.	Discharged.	Died.	Discharged.	Died.	Discharged.	Died.	Discharged.	Died.	Discharged.	Died.	Total	Discharged.	Died.		
Acute Infectious Disease .....	46	6	450	37	34	5	380	54	454	40	—	—	72	2	—	—	12	—	1,448	144	1,592	1,303	141	1,444	
Influenza .....	39	1	56	—	35	—	9	1	—	—	—	—	1	—	—	—	—	—	—	140	2	142	367	18	385
Tuberculosis—																									
Pulmonary .....	56	14	387	224	87	9	24	8	—	—	—	—	6	—	2	—	36	2	598	257	855	585	263	848	
Non-Pulmonary .....	27	2	82	21	21	4	145	44	—	—	—	—	11	—	—	—	54	—	340	71	411	333	87	425	
Malignant Disease .....	116	115	362	359	159	72	3	—	—	—	1	1	10	10	—	—	—	—	651	557	1,208	666	623	1,289	
Rheumatism—																									
(1) Acute Rheumatism (Rheumatic Fever) together with sub-acute Rheumatism and Chorea .....	118	1	160	2	112	1	669	—	—	—	—	—	3	1	—	—	—	—	1,062	5	1,067	1,152	11	1,163	
(2) Non-articular manifestations of so-called "Rheumatism" (muscular rheumatism, fibrositis, lumbago and sciatica) .....	61	—	211	—	55	—	1	—	—	—	6	—	9	—	—	—	—	—	343	—	343	240	2	242	
(3) Chronic Arthritis .....	140	—	187	—	163	—	3	1	—	—	—	—	12	5	—	—	—	—	505	6	511	469	5	474	
Venereal Disease .....	34	—	100	2	447	10	8	2	—	—	—	—	17	2	—	—	—	—	606	16	622	519	19	538	
Puerperal Pyrexia .....	1	—	45	—	14	2	—	—	—	—	—	—	—	—	—	—	—	—	60	2	62	145	—	145	
Puerperal Fever—																									
(a) Women confined in hospital .....	—	—	4	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	4	—	4	3	7	10	
(b) Admitted from outside .....	1	—	5	5	—	1	—	—	—	—	—	—	—	—	—	—	—	—	6	6	12	8	9	17	
Other diseases and accidents connected with Pregnancy and Childbirth .....	561	—	1,028	12	622	5	—	—	—	—	—	—	2	—	—	—	—	—	2,213	17	2,230	2,216	12	2,228	
Mental Diseases—																									
(a) Senile Dementia .....	11	—	9	—	1	1	—	—	—	—	42	93	63	17	—	—	—	—	126	111	237	159	91	250	
(b) Other .....	897	5	46	—	35	—	12	2	—	—	66	8	9	—	19	—	—	—	1,084	15	1,099	1,058	21	1,079	
Senile Decay .....	108	3	91	12	42	2	—	—	—	—	44	20	101	72	—	—	—	—	386	109	495	305	127	432	
Accidental Injury and Violence .....	550	27	998	31	616	37	655	9	—	—	1	1	33	2	—	—	—	—	2,853	107	2,960	3,064	140	3,204	
In respect of cases not included above :—																									
Diseases of the Nervous System and Sense Organs .....	476	114	824	164	337	89	942	79	—	—	15	101	63	—	—	—	—	—	2,680	524	3,204	2,449	479	2,928	
" " Respiratory System .....	857	227	1,261	382	853	174	1,544	192	3	3	19	1	84	31	—	—	—	—	4,621	1,010	5,631	4,865	1,060	5,925	
" " Circulatory ,,, .....	475	517	1,143	277	520	159	347	27	—	1	1	28	127	274	—	—	—	—	2,613	1,283	3,896	2,268	1,190	3,458	
" " Digestive ,,, .....	1,145	61	2,007	96	1,441	65	2,051	67	—	3	—	—	25	4	—	—	—	—	6,669	296	6,965	6,645	350	6,995	
" " Genito-urinary ,,, .....	615	83	1,115	107	747	61	427	11	1	—	—	—	14	8	—	—	—	—	2,919	270	3,189	2,784	265	3,049	
" " Skin .....	212	5	429	8	389	2	369	1	—	—	—	—	3,060	7	—	—	—	—	4,459	23	4,482	4,286	22	4,308	
Other Diseases .....	457	67	604	145	656	124	1,073	76	—	12	4	—	13	7	—	—	—	—	2,807	431	3,238	2,741	446	3,187	
Mothers and Infants discharged from Maternity Wards and not included in above figures—																									
Mothers .....	1,785	—	2,804	—	1,598	—	—	—	—	—	—	—	—	—	—	—	—	—	6,187	—	6,187	5,446	—	5,446	
Infants .....	1,677	—	2,449	—	1,456	—	—	—	—	—	—	—	—	—	—	—	—	—	5,582	—	5,582	4,981	—	4,981	
Any persons not falling under any of the above headings .....	52	11	368	1	1	—	1	—	2,284	3	—	1,402	—	3	—	—	—	—	4,111	15	4,126	3,820	6	3,826	
TOTALS .....	10,517	1,259	17,225	1,885	10,441	823	8,663	574	2,742	62	184	167	5,175	505	24	—	102	2	55,073	5,277	60,350	52,882	5,394	58,276	



# SANITATION.

## SANITARY ADMINISTRATION.

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During the year the district sanitary inspectors made 152,461 inspections and visits for the investigation and suppression of nuisances.

Complaints in many cases were made at the department, only after repeated requests addressed to the persons causing or permitting the nuisance, or to the owner or agents of property, had been ignored. A great deal of the time of the inspectors is taken up by these special investigations.

Requests to examine important public buildings and offices, as well as dwelling-houses of high rateable value are numerous, and the application of the smoke test has in many cases brought to light defects in the drainage system of such premises.

During the year, 18,979 complaints of nuisances were received, as compared with 15,775 the previous year.

The number of notices served for the abatement of nuisances was 28,609 informal, and 15,381 statutory, 65 notices being served for the abolition of ashpits, and 2,143 for the provisions of dust bins.

In 57 cases legal proceedings were instituted at the City Court for failing to comply with notices served for the department under the Public Health Acts.

### Departmental References.

The co-operation which the Public Health Department receives from other departments of the Corporation is fully appreciated, and as a result many sanitary defects are brought to notice, and at once dealt with by the department. Were it not for this early intimation it is possible that defects might remain undiscovered until such time as the district inspector visited the premises in the course of house-to-house inspection.

*References from other Departments.*

From the City Engineer	...	...	...	...	...	294
,, , Water Engineer	...	...	...	...	...	9,120
,, , Education Department (suspected infection in school children)	...	...	...	...	...	3,286
Inter-Departmental References	...	...	...	...	...	455

The officers of the Health Department co-operate with other departments by referring to them matters which are outside the scope of the Health Department, such as waste of water, choked street gullies, defective street and passage paving, dangerous walls, floors and roofs.

*References to other Departments—*

To the City Engineer	...	...	...	...	...	1,751
,, , Building Surveyor	...	...	...	...	...	2,492
,, , Water Engineer	...	...	...	...	...	2,237
,, , Education Department	...	...	...	...	...	43
Inter-Departmental references	...	...	...	...	...	295

**Infected Houses.**

The following table shows the number of houses visited where notifiable infectious diseases have occurred, with the number of visits made by sanitary inspectors to these houses, and to houses where cases of non-notifiable infectious diseases have been reported to the Health Department by the Education Department :—

Number of investigations relating to cases of infectious diseases	...	...	...	...	...	11,825
,, , visits to infected houses	...	...	...	...	...	12,757
,, , , phthisis cases	...	...	...	...	...	1,126
,, , enquiries re suspected smallpox contacts	...	...	...	...	...	1

## **Closet Accommodation.**

There are still 193 privies and 131 pails on farms and outlying houses in the city mainly where sewers are not reasonably available.

Wards.	No. of Houses.	No. of Farms.	No. of Factories, Workshops, Schools, etc.	No. of Privies.	No. of Pails.	DRAINAGE OF PREMISES.		
						Into Cess- pools.	Into Becks, etc.	Into Sewer.
Anfield	...	—	—	1	1	—	—	1
Childwall	...	8	1	1	—	10	9	1
Croxteth	...	72	7	3	87	4	39	38
Fazakerley	...	40	3	2	36	40	41	3
Garston	...	1	—	—	1	—	—	1
Knotty Ash	...	3	—	—	3	—	3	—
Sefton Park W.	...	1	—	—	—	1	—	1
Speke...	...	64	15	2	36	34	22	28
Wavertree	...	2	—	—	—	2	2	—
Woolton	...	50	5	3	29	40	25	32
TOTALS	...	241	31	12	193	131	141	39

## **Factories, Workshops and Shops Inspection, etc.**

## **Factory and Workshop Act, 1901.**

**FACTORIES, WORKSHOPS AND WORKPLACES.**—All factories, workshops and workplaces are visited by four inspectors appointed under the Act, the various premises being grouped in districts so as to secure the maximum number of visits in the minimum time.

	DEFECTS.					
	Reported.	Remedied.				
Want of cleanliness	136	125				
" ventilation	2	2				
" light, by day	2	2				
" light, by night	—	—				
Overcrowding	5	3				
Want of drainage to floors	—	—				
Referred to H.M.I.F. No Abstract exhibited	23	23				
Other matters	4	4				
Other Nuisances	579	524				
Number found infested with rats	67	65				
cockroaches	1	1				
Sanitary Accommodation insufficient	39	32				
Want of separate sanitary accommodation	51	47				
screens, doors, etc.	107	91				
" light	48	45				
Dirty floors, w.c. basins, seats, walls, etc.	156	141				
Want of separate approaches for sexes	19	19				
intervening air space	74	69				
Number of urinals incorrect	1	1				
TOTAL ...	1,314	1,194				

**Administration of the Factory and Workshop Act, 1901, in  
connection with  
Factories, Workshops, Workplaces and Homework.**

The following Tables are prepared by request of the Secretary of State :—

1.—*Inspection of Factories, Workshops and Workplaces.*

Including Inspections made by Sanitary Inspectors or Inspectors of Nuisances.

Premises.	Number of		
	Inspections.	Written Notices	Occupiers Prosecuted.
Factories ... ... ... ...	2,978	295	—
( Including Factory Laundries.)			
Workshops ... ... ... ...	3,098	219	—
( Including Workshop Laundries).			
Workplaces ... ... ... ...	1,228	63	—
( Other than Outworkers' premises).			
TOTAL ... ... ...	7,304	577	—

2.—*Defects found in Factories, Workshops and Workplaces.*

Particulars.	Number of Defects.			Number of offences in respect to which Prosecutions were instituted.
	Found.	Remedied.	Referred to H.M. Inspector.	
<i>Nuisances under the Public Health Acts :*</i>				
Want of cleanliness ... ...	136	125	—	—
Want of ventilation ... ...	2	2	—	—
Overcrowding ... ...	5	3	—	—
Want of drainage of floors ... ...	—	—	—	—
Other nuisances ... ...	579	524	—	—
Sanitary accommodation—				
Insufficient ... ...	39	32	—	—
Unsuitable or defective ... ...	405	366	—	—
Not separate for sexes ... ...	51	47	—	—
<i>Offences under the Factory and Workshop Acts :—</i>				
Illegal occupation of underground bakehouse (s. 101) ... ...	—	—	—	—
Other offences ... ...	—	—	—	—
(Excluding offences relating to outwork and offences under the sections mentioned in the Schedule to the Ministry of Health (Factories and Workshops Transfer of Powers) Order, 1921)				
<b>TOTAL</b> ... ...	<b>1,217</b>	<b>1,099</b>	—	—

\*Including those specified in sections 2, 3, 7 and 8 of the Factory and Workshop Act, 1901, as remediable under the Public Health Acts.

3.—*Administration of Factories, Workshops and Workplaces, Registered Workshops, etc.*

Workshops on the Register at the end of the year.	Number.
Workshops ... ... ... ... ... ... ... ...	2,769
Workshop Bakehouses ... ... ... ... ... ... ...	222
Factory Bakehouses ... ... ... ... ... ... ...	209
<b>TOTAL</b> ... ...	<b>3,200</b>

4. *Other matters.*

Class.	Number.
Matters notified to H.M. Inspector of Factories :— Failing to affix Abstract of the Factory and Workshop Act, 1901 (S.133)	23
Action taken in matters referred by H.M. Inspectors as remediable under the Public Health Act, but not under the Factory and Workshop Act (S.5), 1901. (Notified by H.M. Inspectors. Reports (of action taken) sent to H.M. Inspector) ... ... ... ... ... ...	90
Other Reports to H.M. Inspectors ... ... ... ... ...	4
Underground Bakehouses (S.101) :— Workshop Bakehouses in use at the end of the year ... ... ...	25
Factory Bakehouses in use at the end of the year ... ... ...	39
Homework—Secs. 107 to 110 :— Employers failing to keep list of outworkers (Form 44)... ...	Nil
Notices served on employers for failing to keep or send in lists ...	Nil
List of outworkers not received ... ... ... ...	Nil
Cases of outwork in infected and unwholesome premises ... ...	Nil
Outworkers visited ... ... ... ...	102
Prosecutions for failing to send in list of outworkers ... ...	Nil
Limewashing and painting of Bakehouses (S.99) :— Occupiers requested to limewash or cleanse walls and ceilings of bake-houses ... ... ... ... ...	48

*Homework.*—In accordance with the provisions of the Act, outworkers' returns are received twice yearly, and the premises referred to in the returns are visited by the district sanitary staff to ascertain the sanitary condition of the premises, and if the premises are used as a "workshop" or "domestic workshop". The following statement shows the work undertaken during the year, viz. :—

Number of outworkers' returns received ... ... ... ...	137
Number of returns indicating no outworkers employed ... ... ...	15
Number of returns referred to Sanitary Inspectors ... ... ...	58
Number of visits to premises by Sanitary Inspectors ... ... ...	102
Number of premises found incorrect ... ... ...	—

**Bakehouses.**

The number of bakehouses in use at the end of the year was 431, of which 222 were workshop bakehouses, 25 being underground, and 209 factory bakehouses, 39 being underground. Since the passing of the Factory and Workshops Act, 1901, 343 underground bakehouses have been closed.

During the year, 1,272 visits were paid to bakehouses.

Number of occasions on which bakehouses were found incorrect	...	...	...	...	...	...	97
Number of notices (informal) ...	...	...	...	...	...	...	97
,, „ (statutory) ...	...	...	...	...	...	...	29

Bakehouses.	Defects.	
	Reported.	Remedied.
Walls and ceilings requiring cleansing ...	17	17
Walls and ceilings requiring limewashing ...	31	8
Walls and ceilings requiring painting ...	3	3
<i>Sanitary Accommodation—</i>		
Sanitary accommodation insufficient ...	—	—
Want of separate accommodation ...	9	2
Want of screens, doors, etc. ...	9	5
Want of light ...	4	4
Dirty floors, water-closet basins, seats, walls, etc. ...	23	3
Number of urinals incorrect ...	—	—
Number of premises found infested with rats ...	—	—
Number of premises found infested with flies ...	—	—
Number of premises found infested with cockroaches ...	2	2
Storage of refuse incorrect... ...	8	8
Other Nuisances ...	35	28
<b>TOTAL</b>	<b>141</b>	<b>80</b>

### Restaurants and Café Kitchens.

All kitchens in connection with cafés and restaurants are regularly visited, particular attention being paid to the cleanliness of the premises and of the workers employed in the kitchen. There were 377 in use at the end of the year.

During the year, 1,841 visits were paid to restaurant and café kitchens.

Number of occasions on which restaurants and café kitchens were found incorrect	...	...	...	...	...	...	...	...	...	161
Number of notices (informal)	...	...	...	...	...	...	...	...	...	161
Number of notices (statutory)	...	...	...	...	...	...	...	...	...	76

Restaurants and Café Kitchens.	Defects.		
	Reported.	Remedied.	
Want of light	...	...	61
Want of washing facilities	...	...	9
<i>Sanitary Accommodation—</i>			
Sanitary accommodation insufficient	...	...	5
Want of separate accommodation	...	...	7
Want of screens, doors, etc.	...	...	12
Want of light	...	...	43
Dirty floors, water-closet basins, seats, walls, etc.	...	...	52
Number of urinals incorrect	...	...	2
<i>Section 72, Public Health Act, 1925—</i>			
2. (a) Sanitary conveniences incorrect	...	...	11
(b) Cistern water supply incorrect	...	...	—
(c) Ventilation of drain incorrect	...	...	4
(d) Rooms used as sleeping places	...	...	—
(e) Ventilation of rooms incorrect	...	...	60
3. (a) Walls and ceilings of room requiring limewashing, cleansing, etc.	...	...	136
(b) Accumulations or deposits of refuse in rooms...	...	12	12
4. Unclean condition of articles, apparatus or utensils	...	3	3
Number of trade refuse bins defective	...	22	22
Number of ashbins defective	...	4	4
Number of premises found infested with rats	...	14	14
Number of premises found infested with steam flies	...	12	12
Number of premises found infested with cockroaches	...	5	5
Number of other nuisances	...	64	55
	TOTAL	...	538
		...	511

### Licensed Premises.

Visits were made to 429 licensed premises, and it was found that the conditions under which beer is stored and sold are satisfactory on the whole. Measures have been taken to maintain a good standard of cleanliness in regard to the maintenance of beer pipes and pumps as well as receptacles for waste beer, the result of inspections being as follows:—

**PIPES.** These are mostly of lead construction with tin lining, but in addition, glass was used in 53, and rubber in 15 instances. Monel metal was used in 21 cases, and it would appear that this is gradually replacing the older materials. The pipes are frequently cleansed, being flushed weekly in most cases with a solution of soda and water, followed by clean cold water.

**DRIP SINKS.** These are for the most part constructed with tinned sheet copper, and are provided to the beer engine in all cases. Nine were found to be in a dirty condition. In addition, 11 drip sinks were provided with waste pipes of rubber construction, which were in a dirty state.

**PUMPS.** There was a total of 2,733 pumps in the 429 public-houses visited, and in 52 cases only, the pumps were in a more or less dirty condition.

**SINKS FOR WASHING GLASSES.** Sinks with drainers are provided in all these premises for the purpose of washing glasses. In the majority of cases cold water only is laid on, and hot water is obtained either from the house or from a hot water apparatus in the bar.

**METHOD OF WASHING GLASSES.** In most instances, cold water only is used, the glasses afterwards being placed on the drainer to drain. In 169 cases hot water was used, and in 246 cases a cloth was used for wiping glasses dry or polishing. Mops were used for washing in 14 public-

houses, and bottle brushes in 10. Washing in hot water and soda was carried out in 19 houses in addition to ordinary rinsing, whilst hot water and soap were used in 5 other places.

**TYPES OF VESSELS FOR COLLECTION OF WASTE BEER.** Many types of vessels are used for the collection of waste beer. Some of these were found to be in a dirty condition, and the type of vessel used was not in all cases satisfactory.

#### **Shops Acts, 1912-1934.**

In accordance with the provisions of the Shops Acts, a register of all shops within the city is kept up to date by systematic visitation. The City Council has made 17 half-holiday orders, and 10 closing orders under the Shops Acts, and day and night visits are made to see that the provisions of these orders are carried out.

With regard to the half-holiday orders, the majority of the shops are closed at 1-0 p.m. on Wednesdays. Most of the shops closing on Saturday, the alternative day, are situated in the central area.

Orders have also been made by the City Council suspending the closing hour on the Thursday preceding Good Friday each year, for the retail trade or business of:—

- Fish, Game and Poultry Dealers,
- Fruit and Vegetable Dealers,
- Dealers in Bread and Flour,
- Dealers in Groceries and Provisions.

A female inspector, in addition to her duties under the Shops Acts, has also carried out the provisions of the order made by the Ministry of Health (Circular 235) with reference to "prohibition of the employment of women after childbirth", and in this connection 202 visits have been made to factories and workshops within the city. In each case, the female overseer was interviewed and the requirements of the order

explained and, as a result of the visit and explanation, it may be anticipated that every precaution will be taken to see that the provisions of the order are carried out.

### **Shops Act, 1934.**

The normal maximum working hours for *young persons*, namely 48 hours per week, have been in operation since the 27th December, 1936. Until that date, from the commencement of the Act on 30th December, 1934, a temporary modification of the limitation of working hours permitted a maximum of 52 hours per week.

In addition a limited amount of overtime may be worked by *young persons* between 16 and 18 years of age.

From the records kept in the shops in which *young persons* are employed it is found that shopkeepers generally are conforming readily to the requirements of the Act, and in many cases the total weekly hours of employment of *young persons* fall below the maximum allowed.

There has been considerable improvement in the working conditions in shops, due to the steps taken to carry out the provisions of Section 10 of the Act, which deals with arrangements for the health and comfort of shop workers.

In most cases the necessary work is carried out expeditiously, and it has not been found necessary so far, to request the advice of the court regarding the enforcement of welfare arrangements.

Exemption from providing sanitary conveniences or washing facilities in certain shops, in accordance with the provisions of the Act, has been granted by the City Council. The total number of applications for exemption dealt with up to the end of the year was 194.

### Particulars of Visits and Inspections.

#### Special Complaints.

cessive hours for young persons ...	100
losing and Half-Holiday Orders ...	256
ssistants' Half-Holiday ... ...	72
meal times ... ... ...	27
eats for Females ... ... ...	4
shops Act, 1934, Sec. 10.	
elfare Clauses.	
ventilation ... ... ...	6
eating... ... ...	41
sanitary accommodation ... ...	79
ighting ... ... ...	1
ashing facilities ... ... ...	13
rovision for Meals ... ... ...	4

#### Evening Closing Orders.

No. of shops visited after 7 p.m. ...	35,368
No. closing incorrect ... ...	287
No. of notices incorrect ... ...	318
No. of Informations ... ...	58
No. of shops visited after 8 p.m. ...	68,452
No. closing incorrect ... ...	283
No. of notices incorrect ... ...	249
No. of shops visited after 9 p.m. ...	22,027
No. closing incorrect ... ...	45
No. of shops visited after 9.30 p.m. ...	7,647
No. closing incorrect ... ...	62
No. of shops visited after 10 p.m. ...	634
No. closing incorrect ... ...	5
No. of Street Traders incorrect ...	6

#### Registration.

etail Shops.	
shops visited ... ... ...	5,134
ssistants employed.	
oung persons—Males ... ...	1,555
Females ... ...	1,139
adults—Males ... ...	3,672
Females ... ...	3,302
Wholesale Shops.	
shops visited ... ... ...	475
oung persons employed.	
Males... ... ...	304
Females ... ... ...	111

#### Re-Visits.

Re-Visits re Forms 1934 Act ...	3,021
Welfare Clauses ...	3,422
oung Persons' hours incorrect ...	89
shops seats incorrect ... ...	10
ssistants' Half-Holiday incorrect ...	82
meal Times incorrect ... ...	20
ssistants' Half-Holiday Notice incorrect	374
losing Notice incorrect ... ...	11

#### Sunday Closing Order.

No. of visits to Hairdressing Saloons	517
No. closing incorrect ... ...	5
No. of Notices incorrect ... ...	—

#### Contraventions.

	Reported.	Remedied.
Shop seats incorrect ...	14	14
Assistants' Half-Holiday incorrect ... ...	66	66
Meal times incorrect ...	28	28
Assistants' Half-Holiday notices incorrect ...	589	589
Closing notices incorrect	10	10
Record of hours of em- ployment not kept ...	884	884
Notices re Abstract and seats for assistants incorrect ... ...	1,635	1,635
Young persons' hours incorrect ... ...	48	48
<b>Welfare Clauses, Section 10.</b>		
Ventilation ... ...	46	46
Heating... ...	124	121
Sanitary accommodation	275	202
Lighting ... ...	13	13
Washing facilities ...	219	175
Provision for Meals ...	29	29
<b>Total</b> ... ...	<b>3,980</b>	<b>3,860</b>

#### Visits re Half-Holiday Orders.

No. of shops visited after 1 p.m. ...	183,266
No. closing incorrect ... ...	288
No. of Notices incorrect ... ...	1,217
No. of Street Traders incorrect ...	46

### Administration of Shops Acts 1912-1934. Summary.

No. of shops on register at 31st December, 1936	...	...	...	...	...	...	...	...	...	...	22,500
No. of young persons employed in the shops visited	...	...	...	...	...	...	...	...	...	...	3,109
No. of assistants over 18 years employed in the shops visited	...	...	...	...	...	...	...	...	...	...	6,974
Total number of inspections (Registration)	...	...	...	...	...	...	...	...	...	...	5,609
Total number of visits under Closing Orders	...	...	...	...	...	...	...	...	...	...	134,128
Total number of visits under half holiday Orders	...	...	...	...	...	...	...	...	...	...	183,266
Total number of Sunday visits to hairdressers' and barbers' shops	...	...	...	...	...	...	...	...	...	...	517
Total number of special complaints	...	...	...	...	...	...	...	...	...	...	603
Total number of reinspections after contraventions	...	...	...	...	...	...	...	...	...	...	7,029
Total number of visits...	...	...	...	...	...	...	...	...	...	...	331,152

### Offences.

Nature of Offence.	No. of Contraventions.	No. of Warnings.	No. of Informations.	Prosecutions.			Amount of Fines.		
				No. withdrawn	Discharged. Cautioned.	Dismissed.	Fined.	Costs.	
SHOPS ACT, 1912.									
Prescribed form relating to half holiday of assistants not displayed	589	582	7	4	—	—	—	£1 15 0	—
Correct meal times not allowed to assistants	...	28	—	—	—	—	—	—	—
Half holiday not allowed to assistants	...	62	4	—	2	1	1	0 10 0	£0 8 0
Seats not provided for female assistants	...	14	14	—	—	—	—	—	—
Notices of day of weekly half holiday not fixed	...	1,217	—	—	—	—	—	—	—

		£	1	4	0
		£	4	7	6
Shop open after closing hour on weekly half holiday ...	288	263	25	—	12
Hawking on weekly half holiday after hour fixed by Order ...	46	43	3 (2 not served)	—	—
Shop open after closing hour fixed by closing order ...	287	145	142 (2 not served)	2	90
Hawking after hour fixed by closing order ...	2	—	2	—	1
Notices not displayed in mixed shops after closing hour ...	567	567	—	—	—
SHOPS (HOURS OF CLOSING) ACT, 1928.					
Shop open after Closing hour ...	395	331	23	1	40
Hawking after Closing hour ...	4	3	—	—	1
HAIRDRESSERS' AND BARBERS' SHOP (SUNDAY CLOSING) ACT, 1930.					
Hairdresser carrying on business on Sunday ...	5	4	1	—	—
SHOPS ACT, 1934.					
Excessive hours of employment of young persons ...	48	48	—	—	—
Hours of employment not recorded ...	22	12	10 (Pleaded guilty)	1	—
Not given 11 consecutive hours rest in 24 hours ...	—	—	—	—	6
Correct intervals for meals and rest not allowed ...	—	—	—	—	5 15 0
TOTALS ...	3,578	3,319	259	7	87
				4	156
					£59 10 0
					£11 18 0

191

It was found necessary to caution 268 persons by letter for minor infringements of the Acts.

The officers of the Health Committee have received valuable assistance from the City Police in carrying out the provisions of the Shops Acts and Orders made thereunder.

**Shops Act, 1936—Lending Libraries.****Retail Meat Dealers' Shops (Sunday Closing) Act, 1936.****Shops (Sunday Trading Restriction) Act, 1936.**

The Shops Act, 1936, which extends the provisions of the Shops Acts, 1912 to 1934, to the business of lending books or periodicals when carried on for the purposes of gain, and the Retail Meat Dealers' Shops (Sunday Closing) Act, 1936, become operative on the 1st January, 1937. The latter Act provides for the compulsory closing of retail meat traders' shops and stalls on Sundays, but subject to the provisions of this Act, persons of the Jewish religion may keep their shops open on Sundays provided they are closed on Saturday.

The Shops (Sunday Trading Restriction) Act, 1936, which comes into operation on the 1st May, 1937, is an Act to restrict the opening of shops and trading on Sunday, and the provisions of the Shops Acts, 1912 to 1934, will apply to retail trade or business carried on, and to the employment of shop assistants on Sunday. All shops, with certain exceptions, will require to be closed on Sunday. Persons of the Jewish religion may apply to have their shop registered by the Local Authority, in order to remain open on Sunday, provided they are closed on Saturday, subject to regulations to be prescribed by the Secretary of State. Other transactions for which a shop may be open on Sunday are given in the First Schedule to the Act.

Partial Exemption Orders may be made by the Local Authority in respect to businesses mentioned in the Second Schedule, namely, bread and flour, confectionery, fish, and groceries and provisions. Orders in respect to these trades will enable shops to remain open for the serving of customers with these articles until 10.0 a.m. on Sunday, but the Orders will not take effect until the expiration of nine months from the commencement of the Act.

Special provisions are made for shop assistants who are employed on Sundays to receive holidays in lieu thereof, in addition to the statutory weekly half-holiday. An assistant employed for more than four hours on Sunday will receive a "whole holiday" on a weekday, and must not be employed for more than two other Sundays in that month.

An assistant employed for not more than four hours on Sunday will receive a "half-holiday" on a weekday, this being a day on which he is either not employed before, or not employed after half-past one o'clock in the afternoon of that day about the business of that shop.

The Local Authority may grant a certificate exempting any person engaged in handicraft at his home, from the provision of the Act, if they are satisfied that prohibition of the sale of such articles upon which he is dependent for his livelihood would involve substantial hardship.

A certificate may also be granted by the Local Authority to allow the sale of guide books, postcards, photographs, reproductions, photographic films or plates, and souvenirs, at art galleries or museums (not being under the control of the Local Authority) or at any place of natural beauty or historic interest, or any zoological, botanical, or horticultural gardens, or aquarium, if such sale is desirable in the interests of the public.

Suitable arrangements are being made for the effective administration of the above Acts, and for this purpose Inspectors will be engaged on regular duties throughout the city each Sunday.

#### **Premises, etc., controlled by Byelaws and Regulations.**

##### **Common Lodging Houses.**

At the end of the year 1935 there were on the register (including one emigration house) 89 lodging houses. During the year 1936, 15 houses were given up and removed from the register, leaving, at the end of 1936, 74, providing accommodation for 3,916 lodgers.

Under Part 5 of the Public Health Acts Amendment Act, 1907, Sections 69 to 72 (adopted in 1912), 65 keepers were re-registered and 11 deputy-keepers registered.

#### **Liverpool Corporation Act, 1936.**

##### **Common Lodging Houses.**

Section 72 provides that no house or part of a house within the city shall be exempt from the provisions with respect to common lodging

houses of the Public Health Acts or of this section or any byelaws made under this Act on the ground that accommodation in such house or part of a house is let for a longer period or longer periods than one day or is not let for a less period than one week.

Notwithstanding anything in the Public Health Acts the registration of a common lodging house, whether registered before or after the passing of this Act, shall remain in force only for such time not exceeding one year as may be fixed by the Corporation, but may be renewed from time to time by the Corporation.

Eight verbal notices, for infringements of the byelaws were given to registered keepers during the year.

Infringements of the byelaws had reference to defects in sanitary fittings and paving, windows requiring cleansing or re-glazing, insufficient bedding and bath accommodation, verminous bedding, rooms overcrowded, no hot water supply, choked wastepipes, gullies and w.c. basins, floors not swept or washed, slops not emptied, etc.

No informations were laid against keepers during the year.

#### *Inspection of Lodging Houses.*

Visits by day ...	...	...	...	...	...	...	909
„ „ night	...	...	...	...	...	...	112
„ to houses not on the register				...	...	...	48

#### *Women's Lodging Houses.*

There are 10 houses providing accommodation for 432 women lodgers.

#### *Inspection of Houses let in Lodgings.*

Houses on register, January 1st, 1936	...	...	...	15,565
„ removed from register during 1936	...	...	...	Nil.
„ added to register during 1936	...	...	...	Nil.
„ on register, December 31st, 1936	...	...	...	15,565
Total day visits for the purpose of registration	...	...	...	10,224

*Overcrowding :—*

Infringements found	..	..	..	..	..	80
Re-inspections	..	..	..	..	..	80
Infringements abated	..	..	..	..	..	2

*Non-separation of Sexes :—*

Infringements found	..	..	..	..	..	13
Re-inspections	..	..	..	..	..	13
Infringements abated	..	..	..	..	..	—

<i>Floors, Stairs, etc., found dirty</i>	..	..	..	..	..	27
Cleansed on re-visit	..	..	..	..	..	27

No informations were laid during the year.

**Canal Boats Acts, 1877 and 1884, and Canal Boats Order,  
1878, 1922 and 1925.**

---

The Leeds and Liverpool Canal Company are the proprietors of the only canal having direct communication with Liverpool, and the length of the waterway within the city, exclusive of the locks which lead to the docks, is about three miles.

The number of inspections of canal boats during the year was 2,291, and the condition of the boats and their occupants as regards matters dealt with in the acts and regulations is indicated in the following table :—

Boats on register, 1st January, 1936	..	..	..	410
New Boats registered	..	..	..	16
Boats removed from register	..	..	..	15
*Boats on register, 31st December, 1936	..	..	..	411

Contraventions occurred on 52 boats, of which number, 14 were registered by other authorities.

\*Of the 15 boats removed from the register 1 was broken up, 1 converted to motor propelled boat, 4 have been sold outside the district, 4 not to be used as dwellings, and 5 were re-registered owing to change of ownership.

Nature of Contraventions.	Reported.	Remedied.
Unregistered boats used as dwellings ... ... ...	2	2
No certificate on board or certificate not legible ... ...	4	2
Leaky decks ... ... ... ...	13	12
Defective stoves or stove-pipes ... ... ...	22	17
Cabins requiring re-painting ... ... ...	15	13
Registration authority and number not painted on boat ...	4	4
Dirty cabins ... ... ...	3	3
Registered number not legible ... ... ...	2	2
Defective skylights ... ... ...	5	5
Defective water tank ... ... ...	1	1
Defective scuttle covers ... ... ...	5	3
Verminous cabins ... ... ...	2	2
Defective cabin floors ... ... ...	1	1
Defective cabin fittings ... ... ...	10	10
<b>TOTAL</b>	<b>89</b>	<b>77</b>

Written notices were issued to owners in 52 instances, and verbal notices were given to masters in 4 instances. Of these notices 46 have been complied with. No informations were laid during the year against owners or masters for infringement of the Acts or regulations. No case of infectious sickness was reported as having occurred during the year on any canal boat visiting the district. Sixty-five motor-propelled boats and 58 steam-propelled boats are registered by this Authority.

The inspectors of the Port Sanitary Authority made 831 inspections during the year and 31 contraventions were discovered, which were subsequently dealt with. These figures are included in the foregoing table.

#### *Details of Visits to Boats Plying on the Canal.*

247 boats were visited, which were registered as follows:—154 at Liverpool, 29 Runcorn, 5 Leigh, 1 Wigan, 18 Manchester, 11 Chester. Twenty-nine boats were not registered (not used as dwellings).

All were "wide" boats, 3 being propelled by steam, 95 steam-towed, 51 motor-driven, 31 motor-towed, and 67 horse-drawn.

The number of inspections of these 247 boats was 1,460, and the population comprised:—Men, 395; women, 11; children, 12; a total of 418 persons, the sexes and ages being as follows:—

Males over 14 years of age	...	...	...	...	395
„ „ 5 and under 14	...	...	...	...	7
„ under 5 years of age	...	...	...	...	2
Females over 12 years of age	...	...	...	...	11
„ „ 5 years and under 12	...	...	...	...	—
„ under 5 years of age	...	...	...	...	3
					418

NOTE.—Males on attaining the age of 14 years, and females 12 years, living on canal boats, become adults, and are recorded as such in the above table (made under Reg. 111, Sec. 2, Canal Boats Act, 1877).

Seven children of school age were found on canal boats during the year, who were on trips with their parents during the school holidays. No families were found on a boat on the canal who had not a home ashore in addition to that on board.

### Employment Agencies.

These premises are controlled by Byelaws made under the Liverpool Corporation Act, 1927, and visits are made from time to time to ascertain that the requirements of the Byelaws are being carried out. There are at present 33 licensed Employment Agencies on the Register.

### Liverpool Corporation (General Powers) Act, 1930, Section 27.

The above Section provides for the adequate lighting of common staircases in tenement buildings.

All staircases in tenement buildings have been inspected, and, it was found that in every instance the staircases were adequately lighted.

### Rag Flock Acts, 1911 and 1928.

There are two factories in which rag flock is manufactured in this district. Four visits have been made and two samples of rag flock have been taken, which were in accordance with the standard of cleanliness required by the rag flock regulations. One hundred and seventy-seven visits have been made to premises where rag flock was used, 68 samples were taken, and with the exception of 4, were in accordance with the regulations. In each of the 4 cases the offender was cautioned.

### Inspection of Stables and Removal of Manure.

Stables within the city are systematically visited by the district inspectors, constant attention being paid to the frequent removal of the manure and to general sanitation.

The total number of visits to stables during the year was 15,292, and the following summary indicates the position at the end of the year :—

Number of visits to stables	...	...	...	...	15,292
,,     ,,     ,,     ,,     found occupied	...	...	...	...	998
,,     ,,     ,,     ,,     disused	...	...	...	...	259
,,     ,,     middens inspected	...	...	...	...	7,748
,,     ,,     found fly infested	...	...	...	...	38
,,     ,,     ,,     incorrect	...	...	...	...	308
,,     ,,     visits to manure depots	...	...	...	...	79
,,     ,,     manure pits repaired	...	...	...	...	44
,,     ,,     ,,     emptied	...	...	...	...	264

The number of stables in use at 31st December, 1936, was 998 as compared with 946 at the end of the preceding year.

The manure depots are situated in close proximity to the North Corporation Destructor, and visits are made to them to see that the manure which has been received from the stables in the centre of the city is frequently removed so as to avoid the possibility of breeding places for flies.

During the year 79 visits have been made to manure depots.

### Offensive Trades.

There were on the register of offensive trades in the city at 31st December, 1936, 66 businesses coming under this category, which is three less than the number at the end of the preceding year.

	Nature of business.							1935	1936
Bone boilers...	...	...	...	...	...	...	...	3	2
Bone stores ...	...	...	...	...	...	...	...	2	2
Dripping factories ...	...	...	...	...	...	...	...	7	6
Fat and tallow melters	...	...	...	...	...	...	...	10	9
Fell monger ...	...	...	...	...	...	...	...	1	1
Fertilizer works	...	...	...	...	...	...	...	2	2
Gut scrapers...	...	...	...	...	...	...	...	4	5
Hide and skin works	...	...	...	...	...	...	...	8	9
Knackers' yards ...	...	...	...	...	...	...	...	2	2
Lard refiners	...	...	...	...	...	...	...	2	2
Paint and resin works	...	...	...	...	...	...	...	2	2
Palm oil works	...	...	...	...	...	...	...	1	3
Soap boilers...	...	...	...	...	...	...	...	14	10
Tanneries ...	...	...	...	...	...	...	...	5	5
Tripe boilers...	...	...	...	...	...	...	...	5	6
Tar naphtha works...	...	...	...	...	...	...	...	1	—

When permission is granted to carry on an offensive trade, conditions are imposed requiring that the premises be put in order to the satisfaction of the City Engineer, Building Surveyor and Medical Officer of Health, that no public or private nuisances be caused, and that the business be discontinued whenever the Council shall so require.

During the year the number of inspections was, 2,316.

Number of special visits	...	...	...	...	...	13
,,  ,, ordinary visits	...	...	...	...	...	1,926
,,  ,, re-visits re nuisances	...	...	...	...	...	377
,,  ,, nuisances abated	...	...	...	...	...	302
,,  ,, applications to establish...	...	...	...	...	...	7
,,  ,,                granted	...	...	...	...	...	5
,,  ,,                for renewal	...	...	...	...	...	3
,,  ,,                granted	...	...	...	...	...	3
,, offensive trades discontinued and removed from the register	...	...	...	...	...	4
,,  ,, nuisances found	...	...	...	...	...	311
,,  ,, notices issued (informal)	...	...	...	...	...	234
,,  ,,                (statutory)	...	...	...	...	...	49
,,  ,, premises rat infested	...	...	...	...	...	—
,,  ,,                fly infested	...	...	...	...	...	—

### Fish Friers' Premises.

At the end of the year there were 652 fish friers' businesses within the city, all of which were visited systematically to see that the requirements of the Byelaws were carried out.

Fish Friers' Premises.					Totals.
Number of special visits...	...	...	...	...	154
,,  of ordinary visits	...	...	...	...	2,603
,,  of re-visits	...	...	...	...	1,420
,,  found incorrect ...	...	...	...	...	617
,,  of nuisances found	...	...	...	...	974
,,  of contraventions of Byelaws	...	...	...	...	19
,,  found rat-infested	...	...	...	...	—
,,  found fly-infested	...	...	...	...	—
,,  of incidental calls	...	...	...	...	128
,,  of notices issued (informal)	...	...	...	...	458
,,  of notices issued (statutory)	...	...	...	...	193
,,  of nuisances abated	...	...	...	...	950
,,  of contraventions of Byelaws remedied	...	...	...	...	15

### Picturedromes.

At the request of the Licensing Justices, officers of the Health Committee systematically visit all picturedromes to see that the means provided for the ventilation of the auditorium are in use, attention also being directed to the condition of the sanitary conveniences, provision

## CLASSIFICATION OF IN-PATIENTS WHO WERE DISCHARGED FROM OR WHO DIED IN TRANSFERRED INSTITUTIONS DURING THE YEAR ENDED 31ST DECEMBER, 1936.

Disease Groups.	1936.										1935													
	SMITHDOWN ROAD.		WALTON.		MILL ROAD.		ALDER HEY.		OLIVE MOUNT.		KIRKDALE HOMES.		BELMONT ROAD.		SEAFIELD.		CLEAVER SANATORIUM.		TOTAL.		GRAND TOTAL	TOTAL		GRAND TOTAL
	Discharged.	Died.	Discharged.	Died.	Discharged.	Died.	Discharged.	Died.	Discharged.	Died.	Discharged.	Died.	Discharged.	Died.	Discharged.	Died.	Discharged.	Died.	Discharged.	Died.	Discharged.	Died.	Discharged.	Died.
Acute Infectious Disease .....	46	6	450	37	34	5	380	54	454	40	—	—	72	2	—	—	12	—	1,448	144	1,592	1,303	141	1,444
Influenza .....	39	1	56	—	35	—	9	1	—	—	—	—	1	—	—	—	—	—	140	2	142	367	18	385
Tuberculosis—																								
Pulmonary .....	56	14	387	224	87	9	24	8	—	—	—	—	6	—	2	—	36	2	598	257	855	585	263	848
Non-Pulmonary.....	27	2	82	21	21	4	145	44	—	—	—	—	11	—	—	—	54	—	340	71	411	333	37	425
Malignant Disease .....	116	115	362	359	159	72	3	—	—	—	1	1	10	10	—	—	—	—	651	557	1,208	666	623	1,289
Rheumatism—																								
(1) Acute Rheumatism (Rheumatic Fever) together with sub-acute Rheumatism and Chorea .....	118	1	160	2	112	1	669	—	—	—	—	—	3	1	—	—	—	—	1,062	5	1,067	1152	11	1,163
(2) Non-articular manifestations of so-called "Rheumatism" (muscular rheumatism, fibrositis, lumbago and sciatica).....	61	—	211	—	55	—	1	—	—	—	6	—	9	—	—	—	—	—	343	—	343	240	2	242
(3) Chronic Arthritis .....	140	—	187	—	163	—	3	1	—	—	—	—	12	5	—	—	—	—	505	6	511	469	5	474
Venereal Disease .....	34	—	100	2	447	10	8	2	—	—	—	—	17	2	—	—	—	—	606	16	622	519	19	538
Puerperal Pyrexia .....	1	—	45	—	14	2	—	—	—	—	—	—	—	—	—	—	—	—	60	2	62	145	—	145
Puerperal Fever—																								
(a) Women confined in hospital .....	—	—	4	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	4	—	4	3	7	10
(b) Admitted from outside .....	1	—	5	5	—	1	—	—	—	—	—	—	—	—	—	—	—	—	6	6	12	8	9	17
Other diseases and accidents connected with Pregnancy and Childbirth .....	561	—	1,028	12	622	5	—	—	—	—	—	—	2	—	—	—	—	—	2,213	17	2,230	2,216	12	2,228
Mental Diseases—																								
(a) Senile Dementia .....	11	—	9	—	1	1	—	—	—	—	42	93	63	17	—	—	—	—	126	111	237	159	91	250
(b) Other.....	897	5	46	—	35	—	12	2	—	—	66	8	9	—	19	—	—	—	1,084	15	1,099	1,058	21	1,079
Senile Decay .....	108	3	91	12	42	2	—	—	—	—	44	20	101	72	—	—	—	—	386	109	495	305	127	432
Accidental Injury and Violence .....	550	27	998	31	616	37	655	9	—	—	1	1	33	2	—	—	—	—	2,853	107	2,960	3,064	140	3,204
In respect of cases not included above :—																								
Case of the Nervous System and Sense Organs .....	476	114	824	164	337	89	942	79	—	—	15	101	63	—	—	—	—	—	2,680	524	3,204	2,449	479	2,928
,, „ Respiratory System .....	857	227	1,261	382	853	174	1,544	192	3	3	19	1	84	31	—	—	—	—	4,621	1,010	5,631	4,865	1,060	5,925
,, „ Circulatory „ .....	475	517	1,143	277	520	159	347	27	—	1	1	28	127	274	—	—	—	—	2,613	1,283	3,896	2,268	1,190	3,458
,, „ Digestive „ .....	1,145	61	2,007	96	1,441	65	2,051	67	—	3	—	—	25	4	—	—	—	—	6,669	296	6,965	6,645	350	6,995
,, „ Genito-urinary „ .....	615	83	1,115	107	747	61	427	11	1	—	—	—	14	8	—	—	—	—	2,919	270	3,189	2,784	265	3,049
,, „ Skin .....	212	5	429	8	389	2	369	1	—	—	—	—	3,060	7	—	—	—	—	4,459	23	4,482	4,286	22	4,308
Other Diseases .....	457	67	604	145	656	124	1,073	76	—	12	4	—	13	7	—	—	—	—	2,807	431	3,238	2,741	446	3,187
Mothers and Infants discharged from Maternity Wards and not included in above figures—																								
Mothers .....	1,785	—	2,804	—	1,598	—	—	—	—	—	—	—	—	—	—	—	—	—	6,187	—	6,187	5,446	—	5,446
Infants .....	1,677	—	2,449	—	1,456	—	—	—	—	—	—	—	—	—	—	—	—	—	5,582	—	5,582	4,981	—	4,981
Any persons not falling under any of the above headings .....	52	11	368	1	1	—	1	—	2,284	3	—	—	1,402	—	3	—	—	—	4,111	15	4,126	3,820	6	3,826
TOTALS .....	10,517	1,259	17,225	1,885	10,441	823	8,663	574	2,742	62	184	167	5,175	505	24	—	102	2	55,073	5,277	60,350	52,882	5,394	58,276



of seats for the attendants, the general cleanliness of the premises, and the water supply. A female inspector also makes systematic visits to inspect the sanitary conveniences used by females.

During the year, 629 night visits were paid. A day inspection is also made, so that closer attention may be given to the examination of the sanitary conveniences. In 43 cases minor defects were observed and these were remedied on the attention of the managers being called thereto.

### Special Visits.

Complaints are occasionally received from passengers directing attention to the dirty condition of railway carriages. These carriages are from time to time inspected, and if they are found in an unclean condition the railway company concerned is informed and the matter receives prompt attention.

Number of visits to railway carriages	...	...	...	...	229
,,	,,	platforms (fish arrivals)	...	...	52
,,	,,	poultry depots	...	...	...
,,	,,	marine stores	...	...	950

### Furniture Removers.

Premises visited	...	...	...	...	...	...	53
,, re-visited	...	...	...	...	...	...	—
Vans inspected	...	...	...	...	...	...	79
,, found dirty	...	...	...	...	...	...	3
,, re-inspected	...	...	...	...	...	...	1
Observations re swill removal	...	...	...	...	...	...	320

### Prohibition of Sale of Verminous Furniture, etc.

Under Section 83 of the Liverpool Corporation Act, 1936, no dealer shall sell or expose for sale any second-hand furniture, mattress, bed-linen or similar articles if the same are to his knowledge infested with bed-bugs or if by taking reasonable precautions he could have known the same to be so infested.

Four hundred and fifty-one premises have been visited by the District Sanitary Inspectors, and infringements were observed in 8 cases.

Early in January, 1937, three dealers were summoned, and in two cases were accused of having exposed for sale certain second-hand furniture which by taking reasonable precautions they could have known to be infested with bed bugs, and in the other case, the dealer was accused of selling second-hand furniture infested with bed bugs. In each case the defendant was fined £1.

### **Removal of Remains.**

Under the terms of licences issued from the Home Office the district sanitary inspectors supervised the exhumation and re-interment of 17 bodies during the year.

### **The Licensing of Places for Keeping Cattle.**

**(Liverpool Corporation Act, 1921.)**

Under Sections 475 to 483 of the Liverpool Corporation Act, 1921, every person who keeps cattle shall be required to hold a licence from the Corporation both in respect of himself and also in respect of the premises. On the licence shall be stated the number and description of the animals. The expression "cattle" includes bulls, cows, heifers, oxen, calves, rams, sheep, wethers, ewes, lambs, swine and goats and all other ruminating animals. The Corporation is required to keep a register of the licences granted, in which are entered particulars of the premises and the cattle.

In the following table is a summary of the register of licences in respect of pigs.

#### **REGISTRATION OF PREMISES ON WHICH PIGS ARE KEPT.**

		End of 1935.	End of 1936.
Number of licensed piggeries ...	...     ...	97	92
Number of pigs specified on the licences	...     ...	4,204	3,866
Approximate average number of pigs kept ...	...	2,238	2,170

During the year, one new licence to keep pigs was applied for involving the keeping of two pigs. This application was withdrawn. One application was made for a licence to keep an additional 150 pigs. This application was granted. No licences were transferred from one person to another.

During the year, 447 visits of inspection to piggeries were made. Four piggeries visited were the subject of notices drawing the attention of the occupiers to contraventions of the Liverpool Corporation Act, 1921, and in every case the notice was complied with.

A comparison of the numbers of licensed piggeries during the years 1932-1936, together with the numbers of pigs to which the licences referred, is given in the following table:—

A COMPARISON OF THE NUMBERS OF PIGGERIES AND PIGS LICENSED DURING THE YEARS 1932-1936.

Year.	Number of licensed piggeries.	Number of pigs approved.
1932	133	4,777
1933	130	4,532
1934	106	4,311
1935	97	4,204
1936	92	3,866

In farms situated in the outer districts of the city, premises registered for the keeping of milch cows, may be used also for keeping store cattle. At the end of 1936, 434 store cattle were kept on registered premises.

#### Rats and Mice (Destruction) Act, 1919.

Active measures have been taken within the city throughout the year to ensure the destruction of rats, and to bring to the notice of the

public the necessity of reducing the rat population to the lowest possible dimensions. There are special reasons for a constant campaign against rats in Liverpool. One reason is the possibility of the spread of plague a disease which may be brought into the port on ships arriving from foreign countries. The destruction and damage to property, foodstuffs etc., by means of rats further justifies the stringent measures which are constantly being taken against these vermin. In this connection the co-operation of warehouse owners and occupiers of rat-infested premises is always sought and obtained.

Ten rat-catchers are constantly employed, four being engaged in warehouses, which are visited every three months, in accordance with arrangements made with the Ministry of Health, and six rat-catchers systematically visit cafés, fried fish shops, grocery shops, foodstores, bread shops, and other places where rats are likely to be found.

The assistance given by the rat-catchers is appreciated by occupiers and owners of premises, who are always willing and anxious to forward the extermination of rats. To provide for the destruction of the rats as quickly as possible, each rat-catcher is met at a certain place every morning, the rats being collected and labelled, and a proportion taken the same day for examination by the City Bacteriologist.

The City Engineer's Department has also done valuable work in catching rats in public sewers, the rats being collected and dealt with in the same way.

It has not been found necessary to take any proceedings for non-compliance with the provisions of the Rats and Mice (Destruction) Act, 1919.

Number and Species of Rats caught in the City and Port of Liverpool during the year 1936.

205

Number and Species of Rats examined or destroyed in the City and Port of Liverpool  
during the year 1936.

1936.		Examined (City).				Destroyed (City).				Examined (Port).				Destroyed (Port).				Total Caught.	
		Black.	Brown.	Black.	Brown.	Black.	Brown.	Black.	Brown.	Black.	Brown.	Black.	Brown.	Black.	Brown.	Black and Brown.	Black and Brown.		
January	...	...	...	13	217	44	788	225	56	62	4					1,409			
February	...	...	...	7	233	33	749	251	36	97	—					1,406			
March	...	...	...	5	264	13	888	379	41	150	—					1,740			
April	...	...	...	8	242	63	816	278	34	165	2					1,608			
May	...	...	...	12	253	32	953	242	28	138	1					1,659			
June	...	...	...	8	245	59	992	207	61	200	—					1,772			
July	...	...	...	2	279	38	1,009	223	40	243	—					1,834			
August	...	...	...	11	213	11	899	296	11	127	—					1,568			
September	...	...	...	12	288	36	1,082	366	71	115	—					1,970			
October	...	...	...	6	279	13	1,029	347	53	149	—					1,876			
November	...	...	...	13	253	10	917	315	46	117	—					1,671			
December	...	...	...	2	218	5	769	226	73	102	9					1,404			
Total	...	...	...	99	2,984	357	10,891	3,355	550	1,665	16					19,917			

### Ambulance and Disinfecting Department.

The staff of the Ambulance and Disinfecting Department is engaged in (1) the removal of cases of infectious disease to hospital by ambulance, (2) the disinfection of premises and articles exposed to infection, (3) the disinfestation of verminous houses and articles, (4) charge of the mortuaries.

A reference was made in the 1934 Report to the arrangements made for the disinfestation of Corporation houses, and also the furniture and bedding of tenants or prospective tenants. This work has been continued on an expanding scale. Two courses of action are being taken, namely: (a) The disinfestation of Corporation houses which are occupied or which are awaiting a new tenant after a change of tenancy; and (b) the treatment of furniture and other household effects of those leaving condemned houses for new Corporation houses. In the former case the routine treatment is the use of a blow-lamp and liquid insecticide, and in the latter case articles other than bedding are treated with hydrogen cyanide, and bedding is treated in a steam disinfecter.

A numerical summary of the work of this department is as follows:—

Cases of infectious disease removed to hospital	...	...	5,915
Number of houses disinfected after infectious disease	...	...	7,109
Number of articles of bedding, clothing, etc., disinfected by steam	...	...	118,760
Number of houses inspected for vermin	...	...	3,666
Number of houses treated for vermin	...	...	2,104
Number of houses from which furniture was removed to be dealt with by hydrogen cyanide	...	...	2,232 <sup>(1)</sup>
Number of re-inspections to ascertain whether the work had been effective	...	...	4,616
Number of houses found still to be infested	...	...	28
Number of houses awaiting treatment at the end of the year	...	...	118

<sup>(1)</sup> This involved the treatment of 2294 van loads of furniture.

A trial is being given to the use of heavy naphtha in the treatment of houses infested with bed bugs. The naphtha used is derived by the distillation of coal-tar and consists of a complex mixture of aromatic hydrocarbons and associated bodies. The constituent or mixture of constituents which is toxic to the bed-bug is not known.<sup>(1)</sup>

A brief description of the method is as follows: The house is warmed by the aid of paraffin lamps to a temperature above 75° F. The lamps are removed and the house is sprayed with naphtha at the rate of 1 gallon to every 750 cubic feet of space. The spray pump is designed to force the naphtha under pressure into cracks and crevices, particularly at the juncture of woodwork and brickwork or plaster. Spraying completed, the house is sealed to prevent the escape of vapour. At a temperature of 75° F. the vapour concentration is 0·37 per cent. At the end of 24 hours the seals are broken. During the operation of spraying, masks are worn. The naphtha is harmless to fittings and paintwork, etc., except that cheap paint in which naphtha is a constituent is spoiled and there is a destructive effect upon poor linoleum.

At the time of writing (May, 1937) 78 houses and 38 tenements have been treated with complete success except in two instances. In one case, a house, the treatment was completed on March 4th, the new tenants entered on April 5th and four live bugs were found on April 27th. As no further bugs were found subsequently it is possible that this was a fresh infestation. The second case was that of a tenement of 25 years old construction. There was exceptionally heavy infestation, and much woodwork was half buried in plaster. This tenement required two treatments with naphtha before there was no further evidence of infestation. So far, in Liverpool, the use of naphtha for house disinfection purposes has been highly successful.

### Mortuaries.

The Mortuary at the Prince's Dock is for the reception of the bodies of persons who have been drowned, killed or found dead, and upon which the coroner desires to hold inquests. Bodies are taken to this mortuary by the police, and when it is necessary to make post-mortem

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<sup>(1)</sup> "The Use of Certain Coal-Tar Naphtha Distillates for the Destruction of Bed-Bugs," by S. A. Ashmore, B.Sc., A.I.C. Government Laboratory, and A. W. McKenny Hughes, D.I.C., F.R.E.S., British Museum (Natural History) published in "The Lancet." 27/2/37. In this article is the specification of a suitable naphtha and a description of the method used.

examinations. During the year the number of bodies removed to Prince's Dock Mortuary was: From the river, 9, and from the city, 299.

The method of transport of the bodies of persons killed, or found dead in the street, has been adequately provided for, the Health Committee having arranged, through the Chief Constable, with a firm of undertakers to supply a hearse on short notice, together with a shell coffin. This arrangement has proved satisfactory.

The Ford Street mortuary is provided for the reception of bodies which cannot be kept at the homes in which death has taken place, without possible injury to the health of the inmates, and it is also used for the reception of stillbirths. The number of bodies received during the year was 217.

### Cremation.

The Liverpool Crematorium, which is situated in Anfield Cemetery, was opened by the Liverpool Crematorium Company in the year 1896. When the Corporation became the Burial Authority for the city in October, 1908, they took over the administration of the Crematorium.

That cremation is steadily becoming more popular is shown by the fact that in 1885 there was one crematorium, whereas now there are 33 crematoria in this country; the total number of cremations during 1936 being 11,289.

The number of cremations which have taken place at the Liverpool Crematorium since its opening is shown in the following table :—

Years.	No. of Cremations.
1896-1905 .....	306
1906-1915 .....	465
1916-1925 .....	707
1926-1935 .....	1,591
1936 .....	222
<b>TOTAL.....</b>	<b>3,291</b>

### Smoke Abatement.

The control of smoke emission from industrial chimneys has been well maintained during 1936. General improvement in industrial conditions has aided the work. New boiler plant with mechanical means of firing has been installed in 23 factories whilst in other cases reconstruction of existing plant has been carried out. Expenditure on modernisation makes for efficiency and economy, and a reduction of smoke emission naturally follows. An important part of the work of smoke abatement is to give encouragement and advice which will result in the carrying out of these improvements to boiler plants.

Observations show that the industrial chimneys in the City are smokeless for 54.3 minutes per hour, black smoke issues for 1 minute per hour, and smoke of any density or colour for 5.7 minutes per hour. There remain near the centre of the town a few large factories using old hand-fired boilers where difficulty is experienced in eliminating smoke. In these cases reconstruction of the boiler plant is necessary to effect a permanent cure.

An analysis of the causes of 198 examples of unnecessary smoke is as follows:—

Bad or irregular firing	...	...	...	...	108
Insufficient draught	...	...	...	...	27
Structural defects	...	...	...	...	8
Poor fuel or boilers overloaded	...	...	...	...	45
Firemen having other duties	...	...	...	...	10
Total	...	...	...	...	198

*Complaints.*—During the year 63 complaints were received in respect of smoke nuisance from factory chimneys. In 21 cases the nuisance was abated by increasing the chimney height or by structural alterations to the boiler plant. A change of fuel was made in 8 cases with satisfactory results. In the remaining 34 cases, an abatement of the nuisance was brought about by systematic observations and advice as to firing methods, etc. These complaints necessitated 592 visits and periodical observations.

*Smoke Nuisance from Steamers.*—Improvement regarding smoke emission from steamers in recent years has been well maintained. It

is common for observations to be taken throughout the peak period of the river traffic without a single case of excessive smoke being reported.

During the year there were 60 reports of excessive smoke emission from steamers in dock and on the river, 32 of which related to foreign-going steamers. In every case the owners were communicated with in respect of the nuisance. The existing legislation proved inadequate to deal with smoke nuisance from many classes of steamers on the river and several prosecutions were dismissed owing to technicalities in the legislation. New and enlarged powers have been incorporated in the Liverpool Corporation Act, 1936.

*Railway Smoke.*—The number of trains entering or leaving the principal stations in Liverpool is 825 daily, besides shunting engines engaged on auxiliary service. The smoke and fumes from the engines is causing discolouration and deterioration to buildings, especially large blocks of tenement dwellings recently erected in the vicinity of Lime Street Station. This station is connected with the outskirts of the town by means of a tunnel in which there are a number of openings for ventilation purposes. These act as smoke drains to the detriment of the surrounding property.

A meeting was convened by the Lord Mayor in September, representative of all the bodies interested in the matter, following which a deputation interviewed Sir Josiah Stamp, the President of the L.M. & S. Railway Company. As a result, the Railway Company is now examining means of reducing the smoke nuisance.

*Domestic Smoke.*—Considerable progress is being made in heating and cooking by means of gas and electricity. Nevertheless, in Liverpool, approximately 250,000 open domestic fires are in use during the winter months. These fires consume 19,000 tons of bituminous coal and 1,000 tons of solid smokeless fuel per week.

The clearance of congested areas under the Housing Acts has lessened the concentration of domestic smoke in many parts of the city, but the collective volume of smoke has not been diminished. The pollution from many of the suburban housing areas is extremely noticeable over very wide areas. The open firegrates fitted on the new housing estates are mainly of the "well" type and radiate more heat into the room

than the old-fashioned iron bar type, but as far as the burning of the volatile matter from bituminous coal is concerned the modern type is unsatisfactory.

The sale of solid smokeless fuel is steadily increasing, and arrangements for the supply of these fuels in small quantities have been made. Grate manufacturers can now supply a portable inset grate, suitable for burning domestic coke, which can be inserted in most open hearths by removing the existing bars. These inset grates have a gas-ignition burner, and are being extensively used in hospitals and on new housing estates.

*The Firing of Domestic Chimney Flues.*—This year the number of convictions for this form of offence was 2,310 as against 2,337 the previous year. It is deplorable that certain householders wilfully fire their chimney flues or allow them to become so dirty that they inadvertently fire and clear themselves, to the detriment of the surrounding neighbourhood. House flues should be swept and cleaned at least twice per year where bituminous coal is used as fuel.

Prosecutions for this class of offence are carried out by the police, who are thus assisting greatly in the prevention of atmospheric pollution.

*Lectures on Smoke Abatement and Fuel Economy.*—These lectures, which are designed to be useful to works managers, engineers, boiler attendants and others interested in the efficient and economical use of fuel, have continued to meet with success. Fifty-five students enrolled for the 1936 winter course, and since the commencement of the class four years ago, 350 students from most of the large firms in the area have attended the lectures. Experience has shown that the majority of the firms in Liverpool are co-operating, and it is appreciated that in regard to Smoke Abatement, manufacturers are giving support, and are willing to follow suitable suggestions for efficient and smokeless working of their industrial furnaces.

### Action Taken in respect of Smoke Nuisances.

Proceedings for the abatement of nuisances by the emission of excessive smoke from factories, steamers, etc., were taken under the Liverpool Corporation Act, 1921, Sections 472 and 473, and the Public Health (Smoke Abatement) Act, 1926.

Action under the Liverpool Corporation Act, 1921, Section 472—

Number of reports on steamers in dock	...	...	8
„ „ „ „ „ „ river	...	...	52
			—
			60
			—

Fifty-five steamship owners were communicated with in respect of nuisances caused by the emission of excessive smoke, and 198 manufacturers and 38 steamship owners were cautioned for unnecessary smoke. Five informations were laid, in 4 cases the owners were fined and one case was dismissed. The amount of fines was £2 10s. 0d.

Action under the Public Health (Smoke Abatement) Act, 1926—

Number of chimney observations recorded	...	...	2,506
„ „ minutes black smoke emitted	...	...	1,254
Average minutes black smoke per hour recorded	...	...	1
„ „ all „ „ „ „ „ „	...	...	5·7
Number of reports for black smoke emission	...	...	28
„ „ statutory notices issued	...	...	27
„ „ advisory visits ...	...	...	397

Proceedings in six cases were postponed to allow reconstruction and alterations to be made to furnaces. In every case the nuisance was abated.

### **West Lancashire and Cheshire Regional Smoke Abatement Committee.**

The local authorities comprising this Committee are:—Liverpool, Birkenhead, Bootle, Wallasey, Chester, St. Helens, Widnes, Preston, Lancashire C.C., the Urban District Councils of Bebington, Great Crosby, Huyton-with-Roby, Litherland, Neston, Ormskirk, Prescot, Waterloo-with-Seaforth, and the Rural District Councils of West Lancashire and Whiston. The Runcorn Urban District Council joined the Committee this year.

The Executive Committee, consisting of 14 members, met as required during the year and acted in an advisory capacity on problems connected with smoke abatement.

During the year the Committee authorised the publication of a handbook on Smoke Abatement and Fuel Economy. This handbook, illustrated by sketches and plans, sets out clearly and concisely methods of furnace management and smoke abatement. Eight hundred copies of the handbook were sold and circulated to manufacturers and furnace owners in the area.

### **Atmospheric Pollution.**

There are now in use in Liverpool four standard deposit gauges, one situated in Netherfield Road since 1921, another situated in the grounds of the Carnegie Welfare Centre, Mount Pleasant, since March, 1929, and two others situated on the roof of St. George's Hall and on the roof of the Aigburth Vale High School for Girls respectively, both of which came into use at the beginning of 1934.

The Netherfield Road gauge indicates the conditions which apply to a thickly-populated area in which there are also works and factories; the gauge at St. George's Hall is in a district in which there are many offices and hotels but not a very large population; the gauge at the Carnegie Centre is in a fairly thickly populated residential district with practically no works; while the gauge at Aigburth Vale is in a residential district with large open spaces.

The principal figures are as follows, expressed in tons per square mile:—

		Aigburth Vale Gauge.	Carnegie Gauge.	St. George's Hall Gauge.	Netherfield Road Gauge.
Undissolved matter	...	76.05	237.30	203.07	388.67
Dissolved matter	...	81.72	130.93	186.36	224.13
Total solids	...	157.77	368.23	389.43	612.80
Acidity as H <sub>2</sub> SO <sub>4</sub>	...	8.02	10.65	16.42	8.40
Chlorine as Cl.	...	29.19	36.50	60.72	46.49
Ammonia as NH <sub>3</sub>	...	0.48	1.12	3.50	3.72
Sulphate as SO <sub>3</sub>	...	14.24	24.09	32.30	55.84
Lime as CaO	...	9.96	15.69	18.24	25.92
Rainfall in inches	...	30.33	30.72	25.94	29.98

During the year the rainfall was from 12 per cent. to 16 per cent. less than that of 1935.

The organic matters deposited at Netherfield Road were 35 tons, and the mineral matters 69 tons per square mile less than in 1935. At the Carnegie Infant Welfare Centre the organic matters deposited were 30 tons and the mineral matters 32 tons greater than in 1935. At St. George's Hall the organic matters were  $27\frac{3}{4}$  tons and the mineral matters 43 tons greater than in 1935. There was practically no change in the amount and composition of the matters deposited at Aigburth Vale as compared with those of 1935.

The rainwaters collected during the months of March, April and May at Netherfield Road and during the month of March at St. George's Hall were alkaline. With these exceptions all the rainwaters collected were acid in character.

Details of the analyses month by month at the four stations are given in the following tables:—

## Atmospheric Pollution, 1936.

*(Aigburth Vale).*

RESULTS OF ANALYSES BY THE CITY ANALYST, (CALCULATED IN TONS PER SQUARE MILE).

	Jan.	Feb.	March.	April.	May.	June.	July.	August.	Sept.	October.	Nov.	Dec.	Total for 12 months
Sum Total Solids .....	13.44	10.81	10.58	9.33	14.05	10.78	9.57	9.40	12.63	26.08	11.59	19.51	157.77
UNDISSOLVED MATTER—													
Tarry Matter and Bitumen	0.10	0.13	0.17	0.07	0.07	0.13	0.07	0.17	0.07	0.17	0.10	0.20	1.45
Other Organic Matter .....	1.89	1.79	2.32	1.89	3.16	2.63	2.09	2.39	2.66	2.46	0.75	2.59	26.62
Mineral Matter .....	2.83	4.31	4.32	3.67	3.91	6.44	3.03	3.30	3.67	5.05	3.20	4.25	47.98
Total Undissolved Matter .....	4.82	6.23	6.81	5.63	9.67	6.67	5.19	5.86	6.40	7.68	4.05	7.04	76.05
DISSOLVED MATTER—													
Organic Matter by Ignition	4.78	2.29	1.88	1.68	1.82	1.65	2.63	1.65	2.09	5.53	3.77	8.02	37.79
Mineral Matter .....	3.84	2.29	1.89	2.02	2.56	2.46	1.75	1.89	4.14	12.87	3.77	4.45	43.93
Total Dissolved Matter .....	8.62	4.58	3.77	3.70	4.38	4.11	4.38	3.54	6.23	18.40	7.54	12.47	81.72
Acidity as $H_2SO_4$ .....	1.28	0.91	0.47	0.51	0.20	0.91	0.64	0.30	0.67	0.34	0.91	0.88	8.02
Chlorine as Cl .....	3.33	1.65	1.15	0.94	0.67	1.25	1.41	0.84	2.19	7.14	2.83	5.79	29.19
Ammonia as $NH_3$ .....	0.10	0.10	0.07	0.03	0.02	0.03	0.03	0.07	0.01	0.03	0.02	0.03	0.48
Sulphate as $SO_3$ .....	1.38	1.25	1.01	0.77	0.98	1.28	1.11	0.77	1.28	1.52	1.21	1.68	14.24
Lime as $CaO$ .....	1.21	0.64	0.70	0.67	1.08	1.45	0.64	0.47	1.04	0.61	0.57	0.88	9.96
RAINFALL	93.86	64.13	40.98	26.44	23.80	80.64	85.93	46.27	81.30	60.15	74.03	87.25	764.78
Ph. Value .....	3.8	3.8	4.5	4.0	4.6	3.9	4.4	4.8	4.4	5.0	3.8	3.9	30.33
Millimetres .....													
Inches .....	3.69	2.53	1.61	1.30	0.93	3.17	3.38	1.82	3.19	2.37	2.91	3.43	—

# Atmospheric Pollution, 1936.

(Carnegie Infant Welfare Centre, Cambridge Street.)

RESULTS OF ANALYSES BY THE CITY ANALYST (CALCULATED IN TONS PER SQUARE MILE).

	January	Feb.	March	April	May	June	July	August	Sept.	October	Nov.	Dec.	Total for 12 months
	27.25	22.36	25.68	22.64	35.11	36.52	38.80	31.24	27.46	43.85	24.14	33.18	368.23
Sum Total Solids .....													
UNDISSOLVED MATTER—													
Tarry Matter and Bitumen .....	0.43	0.26	0.36	0.23	0.31	0.43	0.59	0.66	0.30	0.39	0.33	0.46	4.75
Other Organic Matter .....	5.68	4.71	5.53	5.30	8.97	10.38	10.98	8.14	7.02	6.77	4.99	6.67	85.14
Mineral Matter .....	10.03	10.15	13.67	11.27	17.37	16.04	15.24	13.93	9.66	12.35	7.85	9.85	147.41
Total Undissolved Matter .....	16.14	15.12	19.56	16.80	26.65	26.85	26.81	22.73	16.98	19.51	13.17	16.98	237.30
DISSOLVED MATTER—													
Organic Matter by Ignition .....	5.28	3.95	2.75	2.98	4.48	4.60	7.85	5.19	4.67	13.11	5.29	8.54	68.69
Mineral Matter .....	5.83	3.29	3.37	2.86	3.98	5.07	4.14	3.32	5.81	11.23	5.68	7.66	62.24
Total Dissolved Matter .....	11.11	7.24	6.12	5.84	8.46	9.67	11.99	8.51	10.48	24.34	10.97	16.20	130.93
Acidity as $H_2SO_4$ .....	2.14	1.45	0.72	0.48	0.46	1.17	0.26	0.16	0.66	0.39	1.22	1.54	10.65
Chlorine as Cl .....	4.23	2.07	1.48	1.17	1.15	1.73	2.27	1.31	2.63	8.67	3.48	6.31	36.50
Ammonia as $NH_3$ .....	0.20	0.13	0.10	0.03	0.03	0.03	0.07	0.03	0.03	0.30	0.07	0.10	1.12
Sulphate as $SO_3$ .....	2.37	1.73	1.45	1.15	1.96	2.52	2.33	1.38	2.00	2.73	2.07	2.40	24.09
Lime as $CaO$ .....	1.33	1.00	1.00	0.94	1.73	2.30	1.25	0.95	1.74	1.41	1.15	0.89	15.69
RAINFALL { Millimetres .....	103.76	64.45	38.67	30.94	25.14	90.23	81.21	46.40	76.05	61.23	74.12	88.30	780.50
RAINFALL { Inches .....	4.09	2.54	1.52	1.22	0.99	3.54	3.20	1.82	2.99	2.41	2.92	3.48	30.72
P.H. Value .....	3.6	3.7	3.8	4.0	4.0	3.9	5.1	4.3	5.1	3.8	3.8	3.7	—

## Atmospheric Pollution, 1936.

*(St. George's Hall).*

RESULTS OF ANALYSES BY THE CITY ANALYST (CALCULATED IN TONS PER SQUARE MILE).

	Jan.	Feb.	March.	April.	May.	June.	July.	August.	Sept.	October.	Nov.	Dec.	Total for 12 months.
Sum Total Solids .....	28.00	24.12	39.65	32.17	30.25	31.43	22.88	23.68	28.87	55.52	27.08	45.78	389.43
UNDISSOLVED MATTER—													
Tarry Matter and Bitumen	0.27	0.30	0.44	0.47	0.37	0.41	0.17	0.10	0.64	0.34	0.23	0.33	4.07
Other Organic Matter .....	3.81	4.21	5.96	6.20	5.89	6.94	5.08	5.79	6.57	5.22	4.01	5.32	65.00
Mineral Matter .....	7.78	9.64	12.80	17.32	15.33	14.62	9.82	9.74	9.74	11.82	7.65	9.74	134.00
Total Undissolved Matter ....	11.86	14.15	19.20	23.99	21.59	21.97	13.07	15.63	16.95	17.38	11.89	15.39	203.07
DISSOLVED MATTER—													
Organic Matter by Ignition	9.33	5.26	9.77	4.34	3.81	3.43	4.89	3.57	4.20	16.27	6.13	10.75	81.75
Mineral Matter .....	6.81	4.71	10.68	3.84	4.85	6.03	4.92	4.48	7.72	21.87	9.06	19.64	104.61
Total Dissolved Matter ....	16.14	9.97	20.45	8.18	8.66	9.46	9.81	8.05	11.92	38.14	15.19	30.39	186.36
Acidity as $H_2SO_4$ .....	3.13	1.99	—	0.74	0.40	1.38	1.21	0.40	0.91	1.85	2.22	2.19	16.42
Chlorine as Cl. ....	6.17	2.90	4.58	1.99	1.65	2.36	2.63	1.79	3.50	15.80	5.49	11.86	60.72
Ammonia as $NH_3$ .....	0.13	0.17	2.59	0.10	0.03	0.03	0.03	0.03	0.03	0.20	0.03	0.13	3.50
Sulphate as $SO_3$ .....	2.39	2.09	4.41	1.65	1.82	2.66	2.19	1.75	2.39	4.08	2.56	4.31	32.30
Lime as $CaO$ .....	1.68	1.31	1.85	0.98	1.65	0.94	1.08	1.58	2.09	1.45	1.68	1.68	18.24
Millimetres .....	83.29	51.56	29.08	25.12	25.78	84.61	74.03	35.03	68.74	45.61	63.46	72.71	659.02
RAINFALL {													
Inches .....	3.28	2.03	1.14	0.99	1.02	3.33	2.91	1.38	2.70	1.80	2.50	2.86	25.94
P <sub>H</sub> . Value .....	3.4	3.5	6.8	3.7	4.2	3.8	3.9	4.4	3.8	3.8	3.6	3.6	—

## Atmospheric Pollution, 1936.

(332, Netherfield Road).

RESULTS OF ANALYSES BY THE CITY ANALYST (CALCULATED IN TONS PER SQUARE MILE).

	Jan.	Feb.	March.	April.	May.	June.	July.	August.	Sept.	October.	Nov.	Dec.	Totals for 12 months.
Sum Total Solids .....	45.95	37.10	79.25	84.53	37.49	40.24	42.60	23.27	41.61	77.45	45.64	57.67	612.80
UNDISOLVED MATTER—													
Tarry Matter and Bitumen	0.71	0.63	0.51	0.33	0.23	0.51	0.56	0.28	0.39	0.69	0.48	0.68	6.00
Other Organic Matter .....	7.42	6.48	13.69	14.35	6.05	8.37	7.83	4.62	7.17	9.67	7.88	6.96	100.49
Mineral Matter .....	18.18	18.31	51.66	55.31	20.50	16.42	16.22	7.99	17.38	28.19	17.58	14.44	282.18
Total Undissolved Matter .....	26.31	25.42	65.86	69.99	26.78	25.30	24.61	12.89	24.94	38.55	25.94	22.08	388.67
DISSOLVED MATTER—													
Organic Matter by Ignition	9.82	5.08	4.74	5.67	4.97	7.90	4.32	5.55	15.09	6.68	16.54	91.08	
Mineral Matter .....	9.82	6.60	8.65	8.87	5.99	9.97	10.09	6.06	11.12	23.81	13.02	19.05	133.05
Total Dissolved Matter .....	19.64	11.68	13.39	14.54	10.71	14.94	17.99	10.38	16.67	38.90	19.70	35.59	224.13
Acidity as H <sub>2</sub> SO <sub>4</sub> .....	0.99	0.64	—	—	0.49	0.53	0.21	0.34	0.85	1.52	2.83	8.40	
Chlorine as Cl .....	4.46	2.17	1.84	1.66	1.28	2.24	2.19	1.19	2.98	12.19	3.51	10.78	46.49
Ammonia as NH <sub>3</sub> .....	0.46	0.26	0.33	0.08	0.26	0.44	0.08	0.30	0.58	0.17	0.50	0.50	3.72
Sulphate as SO <sub>3</sub> .....	4.21	3.03	4.31	3.11	4.97	5.42	2.52	4.49	6.47	5.44	7.56	7.56	55.84
Lime as CaO .....	2.24	1.28	3.67	2.81	2.50	1.54	0.87	1.99	2.61	2.00	1.50	1.50	25.92
Millimetres .....	87.53	49.76	42.36	31.64	25.01	97.74	86.00	42.36	77.84	56.91	65.46	98.25	760.86
RAINFALL { Inches .....	3.45	1.96	1.67	1.25	0.99	3.85	3.39	1.67	3.06	2.24	2.58	3.87	29.98
P.H. Value .....	3.9	3.9	6.0	6.2	6.0	4.9	4.4	5.1	4.4	3.7	3.6	—	—

### Cleansing and Scavenging.

The City Engineer has kindly supplied the following information, which indicates the operations carried out by the cleansing staff under his control.

The work of the department consists of cleansing and watering the 703 miles of streets within the city, together with their back passages, the periodical emptying of ashbins, street gullies, street and court bins and ashpits, and the disposal of the refuse collected therefrom, etc. During 1936, the quantity of domestic and trade refuse collected was 341,789 tons, and the quantity disposed of was 367,040 tons. The quantity dealt with per working day was 1,196 tons.

The whole of the 703 miles of streets with their passages, with the exception of a few on the outskirts of the city, are swept weekly, the principal streets, and streets in congested areas, receiving constant daily attention. In addition, certain streets and passages are washed by hose pipe.

Seven sweeping machines are employed regularly, five on night work (two of which collect as well as sweep), covering approximately 100 brush miles of roadway nightly, and two on day work, brushing the roadway and picking up the sweepings in side streets.

On Sunday mornings a number of the principal streets and streets in congested areas are cleansed, and all street and court bins emptied.

During 1936, 27,034 tons of street sweepings were collected and disposed of as manure and top dressing.

Three mechanical gully emptiers are now in use, which perform the work in a very satisfactory and sanitary manner.

In connection with street watering, 2,027,202 gallons of water were distributed during the season.

125,052 square yards of carriageway were treated with dust-laying compositions, of which 50,390 square yards were in various parks.

The frequent flushing of trough water closets is a sanitary measure, this type of closet being provided principally in the more densely populated areas of the city. The number of trough water closets in existence at 31st December, 1936, was 396.

There are 31 underground urinals with 283 stalls and 131 overground urinals with 634 stalls in Liverpool, which are cleansed and disinfected at least once daily. During the summer season a large number of urinals and trough water closets are cleansed and disinfected twice daily.

An improved type of fixture ash-bin was first supplied to Liverpool premises in 1898, and at the end of 1936, the number of bins in use of this type was 91,331, the number of ashpits being reduced from 65,000 to 1,186. In addition, more than 109,000 loose bins are in use. In the year 1900 an improved sanitary ashbin was introduced for the use of courts, some of which have been removed owing to property being demolished. The number in use at the end of the year was 719, these are emptied daily. Ashbins and ashpits on domestic premises are emptied approximately once weekly. The bell-cart service provides for the daily removal of domestic refuse from shops, business premises, and dwelling-houses, where no provision can conveniently be made for the storage of this description of refuse. Horse middens are emptied weekly, and more often if required.

In 1936 the Corporation obtained further powers to compel the provision of bins in lieu of ashpits.

All ashpit and ashbin refuse is emptied direct into the carts and motors, and all loaded carts and motors traversing the streets are covered.

The refuse collected is disposed of by burning at three destructors, by disposing at sea, by sale to farmers, and by controlled tipping for reclamation of land, operations being carried out in accordance with suggested regulations of the Minister of Health, to comply with which 73,027 tons of soil, etc., were used for covering the refuse disposed of at tips during the year.

During the year 76,615 tons were burned at the destructors, 61,219 tons of refuse and 9,738 tons of heavy covering material were deposited at sea by hopper barge, 9,017 tons were sold to farmers, etc., and 219,281 tons were otherwise disposed of at tips and for agricultural purposes, etc. In addition, approximately 11,400 tons of clinker residue from destructors were used almost entirely in the construction and maintenance of roads and tramways and in the manufacture of mortar and concrete slabs, etc.

The system of street cleansing, known as the *beat system*, is still in operation in all districts of the city. Under this system the performance of the work of sweeping by gangs is, with very few exceptions, discontinued, and instead, the work is divided among the men, who may be termed barrow men, each of whom is provided with a trolley containing two galvanised bins. By this method the sweepings are not allowed to remain in heaps, but are shovelled up and deposited at once into bins. Specially adapted motor vehicles, each fitted with platforms large enough to accommodate about 40 bins, visit each man three or four times daily, collecting the full bins and replacing them with clean empty bins. The full bins are transported to the depot, where they are emptied, washed, and sent out again.

This system is more hygienic, and by its operation the necessity for tipping the contents of barrows and handcarts on to the street surface and the subsequent loading into the transporting vehicle, is entirely removed.

The bye-law against street littering has now been in operation for four years, and experience shows that the members of the public are displaying a tendency to co-operate with the Corporation in keeping the streets clean. Cases continue to occur, however, in which the Corporation feel compelled to institute proceedings against persons contravening the bye-law, and there is room for greater public effort to maintain the streets in a tidy condition.

### Liverpool Corporation Swimming Baths.

The following information concerning the Liverpool Corporation swimming baths has been kindly supplied by the Baths Manager.

Name of Bath.	No. of Plunges.	Capacity in Gallons.	Nature of Water Supply.	Frequency of Renewal.	Filtration.	Chlorination.	Frequency of Chemical Check.
Harold Davies ...	3	175,000	City water mains	Continuous filtration	Continuous Chlorination	Four times a day.	When filled.
Lister Drive ...	2	122,800					
Lodge Lane ...	2	121,300					
Margaret Street ...	2	129,100					
Picton Road ...	2	110,200					
Queens Drive ...	2	128,400					
Speke Road ...	2	122,300					
Stebble Street ...	2	110,100					
William Roberts ...	3	175,000					
Woolton ... ...	1	43,875					
Burroughs Gardens	2	55,119	River water	No filtration	Chlorination at time of filling	When filled.	When filled.
Cornwallis Street	3	127,500					
Westminster Road	2	146,706					
Burlington Street ...	1	94,500					
Gore Street ...	1	70,333	City water mains	Every two or three days as required	Chlorination at time of filling	When filled.	When filled.
Green Lane ...	1	73,456					
Mansfield Street ...	1	45,706					
Queens' Drive ...	1	45,706					
Stanley Park ...	2	188,131					

All the covered baths are equipped with modern filtration plants, and the open-air baths will be similarly equipped during 1937.

Samples of bath water are frequently submitted to the City Bacteriologist for examination. In the case of baths equipped with modern filtration plant, the water is almost invariably found to reach a drinking water standard, presenting less than 10 organisms per c.c. when grown at 37° or 22° C. and containing no bacillus coli in 100 c.c.s of the sample. This is a satisfactory degree of cleanliness.

## **FOOD INSPECTION**

**including the supervision of dairies, the cleanliness  
of milk and ice-cream, tuberculous milk, diseases  
of cattle, and adulteration of food and drugs.**

## INSPECTION OF FOOD.

The duties in connection with the supervision of food supplies imposed upon the officers of the Health Department by various Acts and Orders are carried out by a fully qualified staff of food inspectors. They entail the examination of the carcases of animals slaughtered for food at the abattoir and private slaughter-houses; the inspection of meat, fish and fruit at the various wholesale and retail markets and cold stores; and the inspection of shops, factories, etc., where foodstuffs are sold, prepared or stored for human food. A number of inspections are also made of food purchased under contract by the Port Sanitary and Hospitals Committee and the Education Committee. In some instances goods supplied were consequently not according to contract and were returned to the contractor.

A numerical summary of the visits paid to premises by the food inspectors is given in Table I.

**TABLE I.**

VISITS PAID TO PREMISES BY THE FOOD INSPECTORS.

Slaughter houses.	Butchers' shops.	Fruit shops.	Fish & Fruit shops.	Food Hawkers' premises.	Jam factories.	Pickle factories.	Ice Cream premises	Food factories	Knackers' yards.	Total visits paid.
467	21,262	21,304	19,458	1,180	53	67	2,519	797	24	67,1

### Knackers' Yards.

A "knackers' yard" means a building or place used for the slaughter of horses, asses, mules and cattle, the flesh of which is not intended for use as human food. There are two such knackers' yards in Liverpool.

### Private Slaughter-houses.

There are nine private slaughter-houses in the city at which, during 1936, 1,688 animals were slaughtered. All the carcases are inspected before being taken from the premises. One of these slaughter-houses is used solely for the slaughter of horses for export abroad as human food.

### The Public Slaughter-house or Abattoir.

Slaughtering may take place at the abattoir at any time during the day or night. It is continuous during one night per week, and sometimes during two, Sunday being a very busy day. The work of inspection of animals and meat, therefore, is almost continuous.

During the slaughter of calves a close watch is kept for evidence of tuberculosis, and several instances have occurred of marked infection in very young animals. Where the origin of the animal is known inquiries are made as to the source of the infection. It may have been from the milk which has been used as food or congenital infection from the mother. In the latter event the mother is slaughtered under the Tuberculosis Order of 1925.

The carcases of 11,110 animals showed abnormal conditions, and a detailed examination was made in each case.

During the year, 3,204 carcases were rejected as being unfit for human food. Of these, 2,125 were destroyed at the abattoir and 1,079 were destroyed at knackers' yards.

During 1936, 546,795 animals of different kinds were slaughtered in Liverpool for human food. An analysis of this figure is given in Table II.

TABLE II.

NUMBER OF ANIMALS SLAUGHTERED IN LIVERPOOL FOR HUMAN FOOD.

	Bulls	Bullocks	Cows	Heifers	Calves	Sheep and Lambs	Swine	Horses
Public Abattoir ... ...	1,828	31,277	15,347	4,892	25,009	405,435	61,319	—
Private Slaughter- houses ... ...	—	—	1	5	14	122	1,357	189
TOTALS ... ...	1,828	31,277	15,348	4,897	25,023	405,557	62,676	189

Many carcases of home-killed animals are brought into Liverpool from other districts. A summary is given in Table III.

TABLE III.

CARCASES OF ANIMALS (HOME-KILLED) BROUGHT INTO LIVERPOOL FROM OTHER DISTRICTS.

Brought into the—	Beef.	Veal.	Mutton.	Lamb.	Pork.
Meat Market ... ... ...	4,370	951	496	5,228	8,506
Factories, Shops, etc. ...	37	23	—	461	525
TOTALS ... ...	4,407	974	496	5,689	9,031

In addition to the above, 3,398 boxes or packages of home-killed offal were dealt with in the meat market.

A large number of carcases of imported meat, both frozen and chilled, pass through the meat market. The figures for 1936 are given in Table IV.

TABLE IV.

CARCASES OF IMPORTED (FROZEN AND CHILLED) MEAT PASSING THROUGH THE MEAT MARKET.

Beef.	Veal.	Mutton.	Lamb.	Pork.
68,764	343	97,020	661,128	12,784

In addition to the above, 22,338 cuts of beef and 154,698 boxes and packages of imported meat and offal were dealt with in the meat market.

**Diseased Conditions.**

A description of the diseased conditions found during 1936 which led to the total or partial destruction of carcasses is given in Table V.

**TABLE V.**

**DISEASES FOR WHICH CARCASSES WERE TOTALLY OR PARTIALLY DESTROYED AS INDICATED IN THE TABLE.**

Disease.	No.	Disease.	No.
Abscess (partial) ...	63	Joint Ill ...	3
Arthritis, Septic (total) ...	94	Nephritis ...	2
,, Simple (partial) ...	315	Pyæmia ...	12
Asphyxia ...	280	Peritonitis Septic ...	25
Chondroma (partial) ...	2	Pneumonia ...	32
Contamination (partial) ...	15	Pleurisy ...	22
Decomposition (total) ...	27	Pleurisy (partial) ...	1
,, (partial) ...	136	Sarcosporidiosis ...	1
Distomatosis ...	343	Septicæmia ...	22
Dropsey ...	181	Septic Mastitis ...	4
Enteritis ...	323	,, Metritis ...	8
Immaturity ...	9	,, Pericarditis ...	5
Injury (total) ...	28	Swine Fever ...	221
,, (partial) ...	589	Swine Erysipelas ...	19
Jaundice ...	27	Tuberculosis (total) ...	622
Melanosis ...	2	,, (partial) ...	674
Neoplasms, Malignant ...	3	Uræmia ...	1

In the routine ante and post mortem examination of pigs several cases of Swine Fever were detected, and subsequently the existence of the disease was confirmed in nine herds containing a large number of pigs.

During the year, 924 "contacts", i.e., pigs which had been exposed to infection, were sent to the abattoir on licences issued by the Ministry of Agriculture and Fisheries and were dealt with by the Food Inspectors.

In addition to the above, 605 carcasses of pigs, which had been slaughtered and dressed in other districts on account of exposure to infection, were examined before being offered for sale in the meat market. This examination resulted in the destruction of 221 carcasses.

In addition to the number of carcasses totally destroyed because diseased conditions made them unfit for human food, a number of organs with localised disease were condemned. A summary is given in Table VI.

TABLE VI.

NUMBER OF ORGANS DESTROYED ON ACCOUNT OF DISEASE, EXCLUSIVE OF ORGANS DESTROYED IN CARCASSES TOTALLY CONDEMNED.

Disease.	No.	Disease.	No.
<b>HEADS AND TONGUES :—</b>		<b>SPLEENS :—</b>	
Abscess ... ... ...	150	Abscess ... ... ...	3
Actinomycosis ... ...	98	Decomposition ... ...	105
Congestion ... ...	48	Peritonitis ... ...	18
Contamination ... ...	14	Tuberculosis ... ...	1,791
Decomposition ... ...	170		
Injury ... ...	11		
Tuberculosis ... ...	5,841	<b>STOMACHS :—</b>	
		Abscess ... ... ...	21
<b>LUNGS :—</b>		Contamination ... ...	4
Abscess ... ... ...	261	Decomposition ... ...	7
Congestion ... ...	25,344	Peritonitis ... ...	18
Contamination ... ...	36	Tuberculosis ... ...	1,796
Decomposition ... ...	668		
Emphysema ... ...	70		
Melanosis ... ...	14		
Parasitic ... ...	869	<b>KIDNEYS :—</b>	
Pneumonia ... ...	968	Abscess ... ... ...	21
Pleurisy ... ...	491	Contamination ... ...	1
Tuberculosis ... ...	6,197	Cysts ... ... ...	195
Unclassified Cystic Conditions...	2,587	Cirrhosis ... ...	138
		Decomposition ... ...	363
<b>LIVERS :—</b>		Nephritis ... ...	28
Abscess ... ... ...	462	Tuberculosis ... ...	1,831
Cavernous Angioma ... ...	1,202		
Cirrhosis ... ...	1,344	<b>UDDERS :—</b>	
Congestion ... ...	1,632	Abscess ... ... ...	162
Contamination ... ...	37	Actinomycosis ... ...	49
Decomposition ... ...	740	Decomposition ... ...	24
Distomatosis ... ...	10,480	Injury ... ...	4
Fatty Infiltration ... ...	101	Mammitis ... ...	2,127
Infarcts ... ...	99	Tuberculosis ... ...	66
Melanosis ... ...	8		
Parasitic ... ...	518	<b>INTESTINES :—</b>	
Peritonitis ... ...	25	Abscess ... ...	11
Tuberculosis ... ...	4,726	Enteritis ... ...	13
Unclassified Cystic Conditions...	1,838	Johnes Disease ...	7
		Necrosis ... ...	2
<b>HEARTS :—</b>		Peritonitis ... ...	22
Abscess ... ... ...	13	Tuberculosis ... ...	2,252
Contamination ... ...	37		
Decomposition ... ...	298		
Pericarditis ... ...	233		
Tuberculosis ... ...	3,920		

### Incidence of Tuberculosis in Bovine Animals.

During 1936, 53,350 bulls, bullocks, heifers and cows were killed, of which 4,985 (9·34 per cent.) were affected with tuberculosis and rejected accordingly.

An analysis of these rejections is given in Table VII.

TABLE VII.  
ANALYSIS OF REJECTIONS ON ACCOUNT OF TUBERCULOSIS.

		Carcase and Organs completely rejected.		Carcase and Organs partially rejected.		Rejection of Organs only.		TOTALS.	
Total number slaughtered.	Number.	Per cent. of animals killed.	Number.	Per cent. of animals killed.	Number.	Per cent. of animals killed.	Number.	Per cent. of animals killed.	
BULLS ...	1,828	0·55	101	5·52	158	8·64	269	14·70	
BULLOCKS ...	31,277	0·06	18	0·17	529	1·69	602	1·92	
HEIFERS ...	4,897	0·43	21	0·51	66	1·35	112	2·29	
COWS ...	15,348	2·72	418	2·56	3,191	20·79	4,002	26·07	
TOTALS ...	53,350	0·88	467	1·07	3,944	7·39	4,985	9·34	

It is interesting to record that 90 of the 1,828 bulls slaughtered were found to be affected with tuberculosis confined to the superficial inguinal glands.

When a bovine animal is infected with tuberculosis, the lungs and associated lymph glands are the organs most commonly diseased. This is shown in Table VIII, wherein is an analysis of the tuberculous organs found in bovine animals, expressed as a percentage of the total bovine animals infected.

TABLE VIII.  
ANALYSIS OF TUBERCULOUS ORGANS IN BOVINE ANIMALS.

Organs infected with tuberculosis.	Number of organs.	Expressed as a percentage of total tuberculous bovine animals.
Lungs and associated lymph glands ... ... ...	3,754	75·3%
Liver ... ... ... ... ... ...	2,269	45·5%
Intestines ... ... ... ... ... ...	2,100	42·1%
Head and associated lymph glands ... ... ...	2,683	53·9%
Stomach ... ... ... ... ... ...	1,641	32·9%
Spleen ... ... ... ... ... ...	1,738	34·9%
Kidneys and genital organs ... ... ... ...	1,759	35·3%

(Table VIII does not include the diseased organs from 467 animals totally rejected.)

### Cows with Tuberculous Disease of the Udder.

During the year, 60 cows slaughtered in the ordinary course of trade were found to be suffering from tuberculous disease of the udder. This figure is 0·39 per cent. of the total cows killed.

### Calves with Tuberculosis.

During the year, 25,023 calves were slaughtered. Fifteen carcases were totally and two carcases partially rejected on account of tuberculosis, and in 13 cases the carcases were passed after rejection of infected organs.

### Quantities of Food Materials Condemned.

The quantities of food material condemned as being unfit for human food are given in Table IX.

TABLE IX.  
FOOD MATERIALS CONDEMNED AS BEING UNFIT FOR HUMAN FOOD.

Beef, Veal, Mutton, Pork. Offal	Fish.		Crabs, Lobsters, Oysters, Crayfish, Shrimps, Prawns, Scallops, Cockles.		Poultry.		Game.		Fruit.		Vegetables.		Canned Food- stuffs.	
	Wet.	Dry.	Mussels, and Winkles.		Fowls, Ducks, Geese, Turkeys, etc.		Partridges, Grouse, etc.		Apples, Pears, Bananas		Nuts, Cokernuts, Almonds, etc.		Eggs.	
			Lbs.	Lbs.	Lbs.	Bags.	Head.	Head.	Head.	Head.	Lbs.	Lbs.	Number.	Tins.
526,990	1,028,100	159,543	21581	1,619	508	2,266	183	23,053	526,187	270,850	8,454	144	839	

A few samples of food materials were submitted for bacteriological or chemical examination as follows:—

TABLE X.

SAMPLES OF FOOD MATERIALS SUBMITTED FOR BACTERIOLOGICAL OR CHEMICAL EXAMINATION.

Fresh Meats and Offals.	Canned Foodstuffs.	Shell-Fish.	Fresh Fish.	Sweets.	Miscellaneous.
4	7	7	—	—	18

### Fruit, Vegetable and Fish Markets.

In Table XI are given the quantities of fish, rabbits, poultry and game which passed through the Wholesale Market during the year.

TABLE XI.

QUANTITIES OF FISH, RABBITS, POULTRY AND GAME WHICH PASSED THROUGH THE WHOLESALE MARKET.

FISH				Rabbits.	Poultry.	Game.
Wet Fish.	Dry Fish.	Shell-Fish.	Salmon.			
16,713 tons	3,978 tons	788 tons	119½ tons	16,584½ packages	8,116 packages	49 packages

The figures in Table XI include only the quantities of these food materials dealt with by firms associated with markets controlled by the Markets Committee.

The wholesale dépôt in Queen Square and the Wholesale Fruit Market are two of the principal distributing centres in the country for imported fruit. During the year, 112,950 tons of vegetables passed through the Vegetable Markets.

### Public Health (Meat) Regulations, 1924.

These Regulations are based on the recommendations of the Departmental Committee on Meat Inspection. They are designed to secure more adequate inspection of animals slaughtered in this country as well as improvements in the handling, transport and distribution of meat.

The objectionable practice of exposing meat in open shop fronts has ceased. However, carcases and meats brought to Liverpool for sale from other places by road, rail or steamer are sometimes insufficiently protected from contamination.

The use of a thin transparent wrapping or covering for foodstuffs exposed for sale in shop windows, on counters or in show-cases is becoming more frequent and is a great help in the protection of food from dust, flies and handling.

### **The Tuberculosis Order, 1925.**

This Order aims at the destruction of cows suffering from tuberculosis in a form that is a source of danger to human beings and to other animals. During 1936, 44 cows were slaughtered under this Order (1).

### **Merchandise Marks Act, 1926.**

This Act requires an indication of origin to be given in the case of imported foodstuffs. From time to time an Order in Council names a food material which, on importation from abroad, must be labelled "Foreign" or "Empire", or must bear a description of the actual country of origin. The food materials so far named are honey and fresh apples; currants, sultanas and raisins; eggs in shell, both hen and duck, and dried eggs; oat products; raw tomatoes; frozen or chilled salmon or sea trout; butter, poultry; bacon, ham and imported meat.

The marking of imported foodstuffs in this way enables the buying public to distinguish between home-produced food and that which has come from abroad.

During 1936 it was found necessary to prosecute in 7 cases for offences under this Act, and 7 convictions were obtained.

### **Agricultural Produce (Grading and Marking) Acts, 1928 and 1931.**

These Acts provide for the grading and marking of agricultural and fishery produce of England and Wales, so that the purchaser shall be in the position to know what is the standard of quality of the food that he is buying.

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(1).—See page 254.

From time to time the Ministry of Agriculture and Fisheries make regulations prescribing "grade designations" for particular commodities and defining the quality indicated by these grade names. For example, the words "Select", "Prime" and "Good" have been chosen to describe three qualities of home-killed beef.

In order that the public may be able to recognise readily a graded food material, it is marked with a prescribed "grade designation mark", consisting of a silhouette map of England and Wales bearing a circular representation of the Union Jack in the centre, around which are the words "Produce of England and Wales". This design has come to be known as "The National Mark". Associated with the National Mark is the grade name descriptive of the quality of the article.

Buyers now realise that the National Mark is a reliable indication of quality, and it is essential that the high standard associated with this mark be maintained.

### **Slaughter of Animals Act, 1933.**

The Slaughter of Animals Act, 1933, came into force on January 1st, 1934. The principal provisions of this Act are two in number, firstly that all animals, except those which are named as exceptions, must be killed or stunned before slaughter by means of a mechanically-operated instrument, and secondly, that all slaughtermen shall be licensed for a period of not exceeding three years, each expiring licence being the subject of renewal on application.

Sheep are exempt from the provisions of this Act unless by resolution of the local authority they are included. The Health Committee has decided to postpone their inclusion until the completion of additional accommodation at the abattoir.

During the year, the following applications for licences as slaughtermen were received, namely: 36 for new licences, 224 for renewal of existing licences and 248 for the slaughter of animals for the food of Mohammedans. In each case the licence was granted.

## THE SUPERVISION OF DAIRIES, COWSHEDS AND MILKSHOPS.

Under the Milk and Dairies Order, 1926, dairies and dairymen must be registered. The expression "dairy" includes any farm, cowshed or milk-store from which milk is supplied on, or for, sale; and the expression "dairyman" includes any occupier of a dairy, any cow-keeper or any purveyor of milk.

TABLE XII.

### Registration of Dairies.

*(Milk and Dairies Order, 1926.)*

Number of registered dairies at the end of 1935.	New applications for registration.	Registration refused.	Dairies removed from the register.	Number of registered dairies at the end of 1936.
789	18	6	54	747

During the year, 79 dairies were transferred from one owner to another. These opportunities were taken advantage of to effect improvements both in structure and apparatus.

The numbers of registered dairies during the five years 1932-1936 were: 818, 815, 801, 789 and 747 respectively.

### Inspection of Dairies.

During the year, 7,710 visits of inspection were paid to dairies. In 35 instances infringements of the Milk and Dairies Order, 1926, were found. In every case the notice of requirements was complied with at once.

The corresponding visits for 1935 were 8,060.

### Registration of Dairymen.

The number of registered dairymen is described in Table XIII.

**TABLE XIII.**

**REGISTERED DAIRYMEN.**

Number of registered dairymen on Jan. 1st, 1936.	Applications for registration.	Applications refused.	Ceased to be dairymen.	Remaining on the register, Dec. 31st, 1936.
869	112	6	177	798

Of the 798 dairymen on the register at the end of the year, 51 were milk-hawkers who, having no premises of their own, are registered at the dairy from which they obtain their supplies and where they store their utensils.

### Conveyance and Distribution of Milk Churns.

Observations were made at railway stations and other distributing centres to ensure that Sections 28 and 29 of the Milk and Dairies Order, 1926, relating to the marking, construction and cleanliness of milk churns, were complied with. During the year 18 notices were sent to farmers outside the city drawing their attention to defects in milk churns. In every case the defects were remedied.

### The Licensing of Places for Keeping Cattle.

*(Liverpool Corporation Act, 1921.)*

Under Sections 475 to 483 of the Liverpool Corporation Act, 1921, every person who keeps cattle shall be required to hold a licence from the Corporation both in respect of himself and also in respect of the premises. On the licence shall be stated the number and description of the animals. The expression "cattle" includes bulls, cows, heifers, oxen, calves, rams, sheep, wethers, ewes, lambs, swine and goats and all other ruminating animals. The Corporation is required to keep a register of the licences granted, in which are entered particulars of the premises and the cattle.

In Table XIV is a summary of the register of licences in respect of milch cows.

TABLE XIV.

## REGISTRATION OF PREMISES ON WHICH MILCH COWS ARE KEPT.

		End of 1935.	End of 1936.
Number of licensed cowsheds...	... ... ...	246	235
Number of cows specified on the licences	...	4,615	4,439
Approximate average number of cows kept	...	3,300	3,230

During the year no new applications for licences to keep cows were received. Seventeen licences were transferred from one person to another.

A comparison of the numbers of licensed cowsheds during the years 1932-1936, together with the numbers of cows to which the licences referred, is given in Table XV.

TABLE XV.

## A COMPARISON OF THE NUMBERS OF COWSHEDS AND COWS LICENSED DURING THE YEARS 1932-1936.

Year.	Number of licensed cowsheds.	Number of cows approved.
1932	275	5,134
1933	272	5,036
1934	254	4,790
1935	246	4,615
1936	235	4,439

During the year, 1,837 visits of inspection were paid to cowsheds. Thirty-six of the cowsheds visited were the subject of notices drawing the attention of the occupiers to contraventions of the Liverpool Corporation Act, 1921. All the notices were complied with, and no prosecutions were necessary nor was any licence forfeited because premises were not properly kept.

A summary of the register of licences in respect of the keeping of pigs and cattle other than milch cows is given on page 202.

### The Daily Supply of Milk to Liverpool.

The quantity of milk consumed in Liverpool daily is as follows:—

TABLE XVI.

DAILY CONSUMPTION OF MILK DURING 1936.

Grade of Milk.	Quantity in Gallons.
Tuberculin-tested (Certified) ... ... ... ... ... ...	135
Tuberculin-tested ... ... ... ... ... ...	1,650
Tuberculin-tested (Pasteurised) ... ... ... ... ...	117
Accredited ... ... ... ... ... ...	8,024
Raw ungraded ... ... ... ... ...	13,441
Pasteurised under licence ... ... ... ...	14,275
Heat-treated to pasteurisation standard ... ...	7,063
Sterilized ... ... ... ...	5,455
Total ...	50,160

The relative quantities of milk produced within the city or brought into the city by rail or by road are as follows:—

TABLE XVII.

DAILY SOURCE OF MILK DURING 1936.

Produced from cows kept within the City.	Brought into the City by road.	Brought into the City by rail.
9,690 gallons	36,764 gallons	3,706 gallons
Total, 50,160 gallons.		

The growth of road transport during recent years has led to increased difficulties in sampling.

**Graded Milk.**

The daily quantity of graded milk consumed is given in Table XVI above. The number of producers and dealers in Liverpool who are licensed in accordance with the Milk (Special Designations) Order, 1936, by the Local Authority, to produce or sell a graded milk, is given in Table XVIII.

**TABLE XVIII.****PRODUCERS AND VENDORS OF GRADED MILK IN LIVERPOOL.**

Nature of licence or licences.	Tuberculin Tested (Certified) Milk	Tuberculin Tested Milk	Tuberculin Tested (Pasteurised) Milk	Accredited Milk	Pasteurised Milk.
Producer only ...	0	0	0	20	0
Producer and retail vendor ...	1	1	1	38	4
Retail vendor only ...	7	9	15	19	0

During the year the following changes in licence-holders took place, namely: 1 new licence was issued to pasteurise "Tuberculin-tested" milk; 6 new licences were issued to producers only of "Accredited" milk; 7 new licences were issued to producer-retailers of "Accredited" milk; 2 new licences were issued to pasteurise milk, and 5 vendors' licences were surrendered.

**Lectures on the Hygiene of Milk Production.**

A course of 7 lectures and 3 demonstrations on the hygiene of milk production for dairymen, cowkeepers and others interested in this subject was held for the first time, and was attended by 87 students. An examination held subsequently was taken by 60 candidates, of whom 43 passed. The demand for instruction of this description proved to be so great that it has been decided to repeat the lectures annually.

### The Provision of Milk for School Children.

Since January 1st, 1935, pasteurised milk only has been supplied under the Milk Marketing Board's scheme to children in school. At the end of the year fifteen firms were approved as sources of milk for school children, of which fourteen actually supplied milk during the year.

The numbers of children who have each consumed a third of a pint of milk daily on five days in each week during each term are as follows:

TABLE XIX.

#### NUMBERS OF CHILDREN CONSUMING MILK DAILY.

Date	Numbers
March, 1934 ...	13,951
November, 1934 ...	73,382
March 31st, 1935 ...	70,343
October 1st, 1935 ...	68,969
March 31st, 1936 ...	71,295
October 1st, 1936 ...	76,438

The average attendance of scholars on October 1st, 1936, was 123,876, so that more than half (61 per cent.) of the children were in receipt of milk daily.

### The Supervision of Milk supplied to School Children.

INSPECTION OF PLANT. The staff of the Health Department pay regular visits to the premises of approved dairymen both for the purpose of inspecting the pasteurising plant and to check the accuracy of the temperature control. The full scope of this inspection was described in the report for 1935. A check upon the accuracy of the temperature recorders was made on 108 occasions. On two occasions only were the holding temperatures found to be too low, in one case the holding temperature being 143° F. owing to a fault in the pre-heater, and in the other case the temperature falling during holding to 142° F. owing to a fault in the temperature maintenance of the holder. Both faults were remedied forthwith.

SAMPLING. Samples of milk were taken regularly in the schools shortly after delivery, and submitted both for bacteriological and chemical examination, the latter including the phosphatase test for efficient pasteurisation.

In Table XX are given the results of bacteriological examination.

TABLE XX.

## BACTERIOLOGICAL EXAMINATION OF MILK SUPPLIED TO SCHOOL CHILDREN.

Number of Samples.	Number found to be Tuberculous.	Total Bacterial Count.				Coliform Organisms.		
		Over 100,000 per c.c.	Between 50,000 and 100,000 per c.c.	Between 10,000 and 50,000 per c.c.	Between 1,000 and 10,000 per c.c.	Under 1,000 per c.c.	Absent in 1 c.c.	Present in 1 c.c. Absent in $\frac{1}{10}$ c.c.
212	None.	5	1	40	67	99	191	3 18

It is noteworthy that none of the samples was tuberculous and that a large proportion exhibited a high degree of cleanliness as shown by a total count of less than 10,000 organisms (80% of the samples) and the absence of coliform organisms in 1 c.c. (90% of the samples).

In Table XXI are given the results of chemical examination, including the phosphatase test.

TABLE XXI.

## CHEMICAL EXAMINATION OF MILK SUPPLIED TO SCHOOL CHILDREN.

Number of Samples.	Fat Content.				Phosphatase Test.	
	4% plus.	3½% plus.	3% plus.	Under 3%	Number of Samples.	Phosphatase Present.
124	21	64	38	1	114	2

It is noteworthy that the majority of the samples (70%) were very rich in cream and that only one sample yielded fat below the legal limit.

The presence of phosphatase indicates either that the temperature of holding was below 145° F. or that the period of holding was below 30 minutes or that raw milk has gained access to the pasteurised milk after the heat treatment was completed. There were two samples only in which phosphatase was detected. In one case it was traced to the presence of raw milk in the pasteurised milk. The dairyman had broken a crate of bottles and, running short of pasteurised milk, had made up the deficiency with raw milk. Needless to say, he was reprimanded. There has been no recurrence of the offence. In the other case the fault in pasteurisation, if any, could not be traced.

### THE CLEANLINESS OF MILK.

The bacterial content of milk is a measure of the cleanliness of production, handling and storage. During 1936, 230 samples of graded milk and 283 samples of ungraded milk were submitted to the City Bacteriologist for bacterial counts. The results are given in Tables XXII, XXIII and XXIV, below.

TABLE XXII.

BACTERIAL COUNTS IN SAMPLES OF CERTIFIED MILK.

Supplied by	No. of samples	Where taken	NUMBER OF BACTERIA PER C.C.		PRESENCE OR ABSENCE OF COLIFORM BACILLI		
			Under 30,000	Over 30,000	Absent in 1 c.c.	Present in 1 c.c.	Present in $\frac{1}{10}$ c.c.
A	10	Wholesale Milk Depot...	10	0	8	0	2
B	5	Milkshop in City... ...	5	0	4	0	1
C	6	Milkshop in City... ...	6	0	6	0	0
Totals ...	21		21	0	18	0	3

The bacterial standard for certified milk laid down in the Milk (Special Designations) Order, 1923, is that the bacteria per c.c. shall not exceed 30,000, and that coliform bacilli must be absent in  $\frac{1}{10}$  c.c. It will be observed that all the samples complied with the bacterial standard in respect of total count, but that 3 samples showed an excessive number of coliform bacilli.

TABLE XXIII.

BACTERIAL COUNTS IN SAMPLES OF GRADE "A" (TUBERCULIN TESTED) MILK.

Supplied by	Number of samples	Where taken.	No. of bacteria per c.c.		Presence or absence of coliform bacilli.			
			Under 200,000	Over 200,000	Absent in 1 c.c.	Present in 1 c.c.	Present in $\frac{1}{10}$ c.c.	Present in $\frac{1}{100}$ c.c.
A	20	Hospitals and Institutions	20	0	14	3	2	1
A	24	Infant Welfare Centres	24	0	20	1	3	0
B	14	do.	14	0	10	1	2	1
C	12	do.	12	0	7	0	4	1
D	3	Hospitals and Institutions	3	0	2	0	1	0
E	18	do.	18	0	11	6	1	0
F	12	do.	12	0	9	2	0	1
G	26	do.	26	0	22	4	0	0
H	16	do.	13	3	4	3	4	5
I	4	do.	4	0	3	1	0	0
J	4	do.	4	0	0	2	1	1
K	3	do.	3	0	2	1	0	0
L	10	Wholesale Depot	7	3	2	3	2	3
M	5	do.	5	0	0	0	2	3
N	7	do.	7	0	4	3	0	0
O	4	do.	3	1	0	0	2	2
P	3	do.	3	0	2	1	0	0
Q	5	do.	4	1	3	2	0	0
R	2	do.	2	0	0	1	1	0
S	3	do.	3	0	3	0	0	0
T	1	do.	1	0	1	0	0	0
U	1	do.	1	0	0	1	0	0
V	12	Farm in City	12	0	9	2	1	0
TOTALS	209		201	8	128	37	26	38

The bacterial standard of Grade "A" (Tuberculin Tested) milk laid down in the Milk (Special Designations) Order, 1923, is that the bacteria per c.c. shall not exceed 200,000, and that coliform bacilli must be absent in  $\frac{1}{100}$  c.c. It will be observed that 201 samples out of the 209 complied with the bacterial standard in respect of the total count, but that 18 samples showed an excessive number of coliform bacilli.

TABLE XXIV.

BACTERIAL COUNTS IN SAMPLES OF UNGRADED AND UNTREATED MILK  
PRODUCED IN LIVERPOOL.

Month.	Number of samples	No. of bacteria per c.c.			Presence or absence of coliform bacilli.				
		Under 30,000	30,000 to 200,000	200,000 and over	Absent in 1 c.c.	Present in 1 c.c.	$\frac{1}{10}$ c.c.	$\frac{1}{100}$ c.c.	$\frac{1}{1000}$ c.c.
January ...	12	11	1	0	4	2	6	0	0
February ...	21	20	1	0	8	8	2	3	0
March ...	23	20	2	1	4	8	7	4	0
April ...	20	15	4	1	3	10	2	3	2
May ...	17	13	3	1	4	7	3	3	0
June ...	48	30	13	5	9	11	16	5	7
July ...	25	12	9	4	2	5	12	3	3
August ...	13	6	5	2	3	1	2	3	4
September	22	14	4	4	2	3	7	4	6
October ...	23	17	3	3	4	8	4	4	3
November	32	27	5	0	9	11	7	3	2
December	27	24	3	0	6	11	9	1	0
TOTAL ...	283	209	53	21	58	85	77	36	27
Percentage of total samples	—	73·9	18·7	7·4	20·5	30·0	27·2	12·7	9·6

The samples of ungraded and untreated milk tabulated in Table XXIV were taken from milk produced in Liverpool by 139 cowkeepers. The milk is from cows milked at 6 a.m., and may have been kept on the counter of the milkshop for several hours before the sample is taken. During this time the milk measure may have been dipped into the milk a number of times as sales have taken place. In these circumstances the results described in Table XXIV create a very favourable impression as to the cleanliness of the milk produced within the city. It will be observed that of the total of 283 samples, 209 contained under 30,000 bacteria per c.c., the recognised bacterial standard for Certified Milk, and that 262 contained less than 200,000 bacteria per c.c., the standard for Grade "A" (Tuberculin Tested) Milk. Furthermore, 58 showed an absence of coliform bacilli in 1 c.c., and a further 85 exhibited this organism only in so large a quantity of milk as 1 c.c., indicating comparative freedom from manurial contamination. A very great improvement has been effected in clean milk production in Liverpool.

### **Ice Cream.**

During the year, 3,300 visits of inspection were paid to the premises of 460 makers of ice-cream.

In April, 1933, a memorandum on sanitary and other requirements was issued to all makers and vendors of ice-cream. This memorandum is published in full in the Report for 1932.

During the year, 73 samples of ice-cream were submitted to the City Bacteriologist for bacteriological examination. The results are given in Table XXV. It is noteworthy that in many cases the bacterial counts were very high.

TABLE XXXV.  
BACTERIAL COUNTS IN ICE CREAM.

Month	NUMBER OF BACTERIA PER C.C.			COLIFORM BACILLI			
	Over 10,000,000	Between 1,000,000 and 10,000,000	Between 100,000 and 1,000,000	Absent in 1 c.c.	1 c.c.	10 c.c.	100 c.c.
March ...	—	—	—	2	1	—	—
April ...	—	—	—	2	2	—	—
May ...	—	—	5	3	13	14	3
June ...	—	—	13	5	7	12	1
July ...	—	—	1	3	2	4	—
August ...	—	—	16	1	—	7	1
Total ...	—	—	(47.9%)	35	12 (16.4%)	26 (35.6%)	40
					6	10	4
					13	—	—

## TUBERCULOUS MILK.

The following propositions on the subject of bovine tuberculosis are well-authenticated and deserve to be widely known :—

- (1) Raw milk, as at present distributed for human consumption, shows on an average the presence of living tubercle bacilli in some 12 per cent. of the specimens examined ;
- (2) About 1,300 children die annually from tuberculous infection of bovine origin, while many others suffer disabling and deforming illnesses ;
- (3) These disasters are due mainly, if not entirely, to the infection of the children through the milk supply ;
- (4) Pasteurisation, properly performed, or failing this, the boiling of the milk, reduces the risk of tuberculosis and other milk-borne infections to the vanishing point.

It is evident, therefore, that the examination of milk for the presence of tubercle bacilli is a very important part of the work of a Health Department.

### The Examination for Tuberculosis, of Milk produced within the City.

During the year, 487 samples of milk produced within the city were submitted for bacteriological examination for tubercle bacilli with the following results :

TABLE XXVI.

#### THE EXAMINATION FOR TUBERCULOSIS, OF MILK PRODUCED WITHIN THE CITY.

Kind of Milk.	Number of samples.	Tubercle bacilli present.	Percentage tuberculous.
Graded milk ... ...	211	11	5·2
Ungraded raw milk ...	276	27	9·8

The percentage of samples of ungraded raw milk which proved to be tuberculous, namely, 9·8 per cent., is considerably less than the percentage of tuberculous samples of milk produced in areas outside the city, namely, 15·6 per cent. (see below). The corresponding figure for last year was 7 per cent.

**The Examination for Tuberculosis, of Milk produced in Areas outside the City.**

During the year, 592 samples of milk produced in areas outside the city were submitted for bacteriological examination for tubercle bacilli with the following results:—

TABLE XXVII.

**THE EXAMINATION FOR TUBERCULOSIS OF MILK PRODUCED IN AREAS OUTSIDE THE CITY.**

Kind of Milk.	Number of samples	Tubercle bacilli present.	Percentage tuberculous.
Graded milk ... ...	368	16	4·3
Ungraded raw milk ...	224	35	15·6

The percentage of samples of raw milk on sale to the public which proved to be tuberculous, namely, 15·6 per cent., is considerably higher than the percentage for milk produced within the City, namely, 9·8 per cent. The corresponding figure for last year was 14·6 per cent.

The following table shows the situation of the areas outside the city from which tuberculous milk was received:—

TABLE XXVIII.

**THE SITUATION OF AREAS WITHOUT THE CITY FROM WHICH TUBERCULOUS MILK WAS DERIVED.**

County.	Description of Milk.	Number of samples.	Tubercle bacilli present.	Percentage tuberculous.
Lancashire ... ...	Raw ungraded ...	57	9	15·8%
Cheshire ..... ...	„ „	115	21	18·2%
Denbighshire ...	„ „	24	1	4·1%
Flintshire ... ...	„ „	10	3	30·0%
Shropshire ... ...	„ „	16	1	6·2%
Westmorland ...	„ „	2	0	—
		224	35	15·6%

## DISEASES OF CATTLE AND THE MILK SUPPLY.

The statistical information and observations in the paragraphs that follow have been kindly supplied by the Chief Veterinary Officer.

### Anthrax and Foot-and-Mouth Disease.

One case of anthrax but no case of foot-and-mouth disease occurred within the city during 1936.

### Tuberculosis occurring in Cows within the City.

There are in Liverpool approximately 3,230 cows in milk. Details of the veterinary examinations of these cows, together with similar figures for the previous five years, are given in Table XXIX.

TABLE XXIX.

THE VETERINARY EXAMINATION OF COWS IN LIVERPOOL COWSHEDS.

Year.	Visits for clinical examinations.	Samples of milk from suspected town cows examined microscopically.	Cows examined.	Cows with tuberculosis of the udder or giving tuberculous milk.
1931.....	831	131	10,201	35
1932.....	567	134	7,636	27
1933.....	580	169	7,718	28
1934.....	460	143	6,419	32
1935.....	779	411	10,285	37
1936.....	702	313	8,441	46

The number of routine Sanitary Inspectors' visits paid to cowsheds was 1,718, of which 75 were special visits to supervise the disinfection of premises from which diseased cattle had been removed.

### Tuberculosis occurring in Cows outside the City.

Tuberculous milk coming into Liverpool from an outside area is reported to the Medical Officer of Health of the place of origin, whose duty it is to arrange for a suitable investigation. It is the practice of the Chief Veterinary Officer to be present at the first examinations of the suspected herds. During 1936, 49 such visits of inspection were made, in addition to 15 investigations of cases brought forward from the previous year.

During the year, tuberculous milk was sent into Liverpool from Cheshire, Denbighshire, Flintshire, Lancashire and Shropshire. In Table XXX is given a description of the action taken as the result of the discovery of tuberculous milk coming from these areas. In those cases where no cow was detected with a tuberculous udder, the contamination had either ceased or the affected cow had been sold for slaughter.

TABLE XXX.  
TUBERCULOUS MILK SENT INTO LIVERPOOL.

County of origin	Number of farms to which tuberculous milk was traced	Number of cows examined and re-examined	Number of cows destroyed with tuberculous disease of the udder *	Instances in which no tuberculous udder was discovered
Cheshire .....	39	1,900	19	18
Denbighshire	2	61	0	2
Flintshire ...	4	223	3	1
Lancashire...	17	889	18	6
Shropshire ...	2	72	1	1
<b>TOTALS ...</b>	<b>64†</b>	<b>3,145</b>	<b>41</b>	<b>28</b>

\* In some cases more than one diseased animal was discovered on a farm.

† This total includes 15 cases brought forward from 1935.

### The Milk Supply of Corporation Institutions.

The Port Sanitary and Hospitals Committee takes approximately 890 gallons of Tuberculin-Tested milk and 1,169 gallons of Accredited milk per day. The total annual consumption is, therefore, about 750,000 gallons.

The Hospitals and Institutions non-tuberculin-tested supply was found to be tuberculous on 16 occasions, and including one herd which was still under investigation at the end of 1935, 5 cases of tuberculosis of the udder and 3 of other forms of tuberculosis were detected from the suspected sources. With the exception of three cases, which were under

investigation at the end of 1936, contamination was proved to have been eliminated in each instance. Routine examination of hospital supply premises resulted in the detection of 4 cases of tuberculosis of the udder and 5 of other forms of tuberculosis. Three further cases (not of udder) were reported to the department by the owner of a city herd.

The Grade A (Tuberculin-Tested) Supply, as it was then known (this case occurring before the change of nomenclature in grades of milk as provided for under the Milk (Special Designations) Order of 1936) was found tuberculous on one occasion. Examination of the herd concerned resulted in the detection of one cow suffering from tuberculosis of the udder and two from other forms of tuberculosis. The remaining cattle were subjected to the tuberculin test, which revealed a very high percentage of reactors. In view of the unsatisfactory state of affairs existing on the premises, the supply from this source was withdrawn.

#### **The Tuberculosis Order of 1925.**

Under the Tuberculosis Order of 1925 certain forms of bovine tuberculosis are notifiable by owners and by veterinary surgeons.

This Order aims at the destruction of cows suffering from tuberculosis in a form that is a source of danger to human beings and to other animals.

Owners are compensated for cattle which are slaughtered, the scale being three-quarters of the market value when the disease on *post-mortem* examination is found to be "not advanced," and one-quarter when the disease is "advanced," as defined in the Order.

The Ministry of Agriculture and Fisheries bears the cost of 75 per cent. of the compensation payments and the Local Authority pays the remainder. In most cases the payment by the Local Authority is counter-balanced by the amount received for salvage, so much so that, except in 1932, there has been a yearly credit balance to the city since the introduction of the Order.

In Table XXXI are given the number of animals dealt with during 1935 and 1936, and the nature and degree of disease from which they suffered.

TABLE XXXI.  
SLAUGHTER OF CATTLE SUFFERING FROM TUBERCULOSIS.

Year.	Total number of animals examined.	Number slaughtered.	CLASSIFICATION OF THE DISEASE.			RESULT OF POST-MORTEM EXAMINATION.	
			Tuberculous disease of the udder.	Giving tuberculous milk.	Tuberculous emaciation.	Chronic cough and definite signs of tuberculosis.	Advanced disease.
1935	1,295	66	34	3	1	28	52
1936	1,513	88	44	1	1	42	74

The total market value of the animals slaughtered was £933 5s. 0d.

The amount paid in compensation and recovered from the Ministry of Agriculture and Fisheries as well as from the sale of carcases is given below:—

	£ s. d.		£ s. d.
Compensation refunded by the Ministry of Agriculture ... ...	257 18 1	Compensation paid to owners ... ...	343 17 6
Amount recovered by sale of carcases ... ...	<u>93 4 3</u>	Credit balance ... ...	7 4 10
	<u>£351 2 4</u>		<u>£351 2 4</u>

## THE ADULTERATION OF FOOD AND DRUGS.

The adulteration of food (including milk) and drugs is discovered by sampling followed by chemical analysis. The procedure adopted is that described in the Food and Drugs (Adulteration) Act, 1928. The addition of preservatives to food is now forbidden except in the case of foods mentioned and in respect of the preservatives specified in the Public Health (Preservatives, etc., in Food) Regulations.

During the year a total of 8,511 samples of food and drugs was purchased or taken and submitted for examination. Of these samples 5,329 were formal samples and 3,182 were informal samples.\* The results are summarised in Table XXXII.

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\* An "informal" sample is one purchased without intimation to the vendor that it is to be analysed. Valuable information as to sources of fraud may sometimes be obtained in this way. Prosecution for adulteration cannot be undertaken, however, until a "formal" sample has been taken subsequently in accordance with the procedure described in The Food and Drugs (Adulteration) Act 1928.

TABLE XXXII.

## SUMMARY OF OFFENCES UNDER THE FOOD AND DRUGS (ADULTERATION) ACT, 1928, DURING THE YEAR 1936.

INFORMAL SAMPLES.			FORMAL SAMPLES.			Number of vendors cautioned.	Informations laid.
Number of samples taken.	Number found genuine.	Number adulterated.	Number of samples taken.	Number found genuine.	Number adulterated.		
—	—	—	Arrowroot...	...	...	12	—
6	6	—	Baking Powder	...	...	8	—
2	2	—	Barley	...	...	186	5
48	48	—	Beer and Stout	...	...	—	1
30	30	—	Bread	...	...	—	—
77	77	—	Butter	...	...	363	—
15	15	—	Cake Flour and Mixtures	...	—	—	—
25	25	—	Cheese and Wrapped Cheese	...	—	—	—
15	15	—	Cocoa and Mixtures	...	—	—	—
101	95	5	Condensed Milk	...	—	—	5
7	7	—	Coffee and Mixtures	...	—	—	—
140	139	—	Confectionery	...	...	52	—
13	13	—	Cake and Biscuits	...	—	—	—
28	28	—	Condiments and Spices	...	—	10	2
12	12	—	Corn Flour	...	—	131	1
				...	6	6	—

## SUMMARY OF SAMPLES, &amp;c.—continued.

INFORMAL SAMPLES.			Nature of Sample.			FORMAL SAMPLES.			Informations laid.		
Number of Samples taken.	Number adulterated.		Number found genuine.	Number found genuine.	Number adulterated.	Number of Vendors cautioned.					
	Number found genuine.	Seriously.									
1	1	—	—	—	Cream of Tartar ...	... 19	18	1	—	1	—
58	58	—	—	—	Cream and Tinned Milk	... —	—	—	—	—	—
35	35	—	—	—	Custard Powder ...	... 2	2	—	—	—	—
3	3	—	—	—	Dripping and Compounds	... 13	12	1	—	1	—
24	24	—	—	—	Dried Fruits	... 134	133	1	—	—	—
30	28	2	—	—	Drugs	... 3	3	—	—	2	—
14	14	—	—	—	Egg Substitute Powder	... —	—	—	—	—	—
1	1	1	—	—	Flour	... 81	81	—	—	—	—
2	2	—	—	—	Ground Almonds and Substitute	... 23	23	—	—	—	—
11	11	—	—	—	Honey	... 15	9	6	—	—	8
102	95	7	—	—	Jams, Jellies and Marmalade	... —	—	—	—	—	—
21	21	—	—	—	Lard and Compounds	... 125	124	1	—	—	1
10	10	—	—	—	Lemon Cheese and Curd	... —	—	—	—	—	—
48	48	—	—	—	Margarine	... 8	8	—	—	—	—
1861	1799	50	12	—	Milk	... 3010	2857	123	30	12	53
2	2	—	—	—	Oatmeal and Preparations	... 55	55	—	—	—	—

## SUMMARY OF SAMPLES, &c.—*continued.*

Milk was the food material which accounted for the greatest number of samples, namely, 4,871. All the milk samples were examined for added water, fat deficiency, added colouring matter and added preservative. The results of the legal proceedings taken are given in Table XXXIV below. In no milk sample was any added preservative found.

In Table XXXIII is an analysis of where and when milk samples were taken, together with the number of subsequent prosecutions.

TABLE XXXIII.

## MILK SAMPLES.

Where the samples were taken or purchased.	NUMBER OF SAMPLES TAKEN ON			
	Weekdays.	Subsequent Prosecutions.	Sundays.	Subsequent Prosecutions.
City Milkshops ... ... ... ...	1,770	38	336	8
Wholesale Milk Depots ... ... ...	955	7	2	—
Railway Stations ... ... ...	114	—	—	—
Hospitals and Public Assistance Institutions ... ... ...	1,296	—	—	—
Other Hospitals and Institutions ...	28	—	—	—
Infant Welfare Centres and Day Nurseries	370	—	—	—

In the course of the collection of samples enumerated in Table XXXII, 4,128 visits were paid to shops, 148 visits to premises of wholesale dealers in margarine, and 3,093 visits to other places.

In Table XXXIV is a summary of the prosecutions during 1936 for offences under the Food and Drugs (Adulteration) Act, 1928, and the Milk and Dairies (Amendment) Act, 1922, together with the fines inflicted and the costs recovered.

TABLE XXXIV.  
OFFENCES UNDER THE FOOD AND DRUGS (ADULTERATION) ACT, 1928, AND MILK AND DAIRIES AMENDMENT ACT, 1922.

No. of informa- tions laid.	Nature of Sample.	Nature of Offence.	RESULT OF LEGAL PROCEEDINGS.				
			No. of convic- tions.	Withdrawn on payment of costs.	Withdrawn and dismissed without costs.	Fines.	Costs.
15	Milk ...	... Adulterated with water	... 15	—	—	44 10 0	16 16 0
37	Milk ...	... Deprived of milk fat	... 33	—	4	22 1 0	34 13 0
1	Skimmed Milk	... Coloured with annatto	... 1	—	—	—	1 1 0
1	Lard ...	... Devoid of lard and consisted of hydrogenated fat...	... 1	—	—	3 0 0	3 3 0
1	Olive Oil	... Consisted of soya bean oil	... 1	—	—	2 0 0	1 1 0
55			51	—	4	71 11 0	56 14 0

### **Food Poisoning.**

Two examples of food poisoning came to notice during the year.

In the first one, in June, a family of three persons was admitted to hospital with an illness characterised by vomiting, diarrhoea and abdominal pain. Recovery was rapid. The patients attributed the illness to a meal of tinned crab. Bacteriological examination of the crab and other food materials was negative and no organisms of the food poisoning group were recovered from the faeces. The patients were discharged from hospital before blood agglutination tests would have been of value.

The second example, in August, was discovered in a female patient aged 19 years who had been admitted to hospital as a case of typhoid fever. The illness proved to be due to infection with *Salmonella Thompson*. The origin of the infection was not discovered.

### **Fertilizers and Feeding Stuffs.**

During 1936, 132 samples of fertilisers and feeding stuffs were submitted for analysis. It was not necessary to take legal proceedings.

### **Pharmacy and Poisons Act, 1933.**

The Pharmacy and Poisons Act, 1933, regulates the sale of poisons. It is the duty of the Local Authority to carry out Part II of the Act, which deals with the registration of persons selling poisons mentioned in the Poisons List Confirmation Order, 1935. The number of names entered in the register is 494.

**REPORT OF THE CITY BACTERIOLOGIST, 1936.**

*General.*—The total number of specimens submitted for examination during the past year was 83,815, which represents an increase of 11,000 over the preceding year (72,721) and 28,000 over the number for 1934 (55,740), or an increase of 50 per cent. in two years. The greater part of this increase is associated with work upon diphtheria.

*Milk Examination.*—The new methods required by the demands of the Ministry of Health have continued to be tested during the year and have now been adopted as the routine procedure for all milk examinations for the City of Liverpool.

The routine examination of milk for tubercle bacilli revealed the presence of this organism in 100 general milk samples out of 1,117 tested. Specimens of heat treated milk, 211 in number, for the use of school children were found without exception to be free of tubercle bacilli. It is extremely satisfactory to be able to record that during the past two years 440 specimens of milk for school children have been similarly examined without obtaining any evidence of the presence of living tubercle bacilli. On the other hand, among 375 samples of school milk, mostly unheated, which were submitted by other authorities, 28 were found to contain these organisms in sufficient numbers to infect laboratory animals. One specimen from a tuberculin tested herd was found to be tuberculous. A total of 123 samples submitted by the veterinary department provided 24 positive results.

*Water.*—The usual daily and monthly routine samples from the general supply and the Prescot reservoirs revealed no serious departure from a satisfactory standard.

*Plague.*—A total of 7,594 rats from the port and city were examined for evidence of plague. A batch of five from one ship were regarded as suspicious and from four of these virulent plague bacilli were isolated. As noted in the report for 1935 these cases also would have been overlooked if microscopic preparations had not been made as well

as the ordinary microscopic examination. No other animals were found to be infected.

*Diphtheria*.—The study of the incidence of the various types of diphtheria bacilli has been continued and extended by the examination of more than 2,000 strains. In a routine series of 1,418 strains the types were represented as follows:—Gravis 530, Intermediate 435, Mitis 453. A more detailed study of the relation of these types to clinical forms has been begun with the co-operation of the medical officers of the fever hospitals. This is still in progress. It has also been thought desirable to make a study of the value of bacteriological investigations in connection with the diagnosis of diphtheria. Work was begun upon this point in April at one hospital and the results were so suggestive that it has now been extended to all the fever hospitals under the Corporation and will be continued during the ensuing year. These elaborations of the work upon diphtheria have meant a considerable extension of the technical procedures and have made a somewhat heavy demand on the available staff. The results already obtained, however, appear to have fully justified the extensions.

*Enteric Diseases*.—Further experience of the methods introduced last year have confirmed the good opinions then formed. From 281 specimens of faeces and 155 of urine 72 strains of the organisms concerned were obtained. Of the faecal organisms 14 were typhoid bacilli and 53 *B. paratyphosus B.* These figures, of course, include cases in which the organisms were isolated on more than one occasion from the same case. Three strains of Flexner's dysentery bacilli were isolated during the year, all belonging to the type X, which is relatively uncommon in England.

*Anthrax*.—The number of specimens of wool and hair from the Government disinfecting station has slightly increased again this year, from 336 to 364. Half of these had been treated and half were submitted for examination prior to disinfection. Of the 182 untreated samples 104 were found to contain anthrax bacilli. The results of the examination of untreated samples, chiefly of goat-hair, from various sources were as under:—

Source.	Positive.	Negative.
Persia ... ... ...	4	1
Balkan Countries ...	7	2
Russia ... ... ...	15	12
South America ...	1	3
China ... ... ...	11	9
North Africa ... ...	16	6
East Indian ... ...	43	11
Other sources ...	7	34
	104	78

No anthrax bacilli were obtained from any treated sample and on only 3 occasions were any surviving spore-bearing organisms isolated therefrom.

*Work for Authorities outside the Liverpool area.*—The services of the laboratory have continued to be sought by outside authorities, who submitted in all about 900 specimens more than in the preceding year.

*Accommodation.*—The increase in demands upon the department, coupled with the extension of research, technical and teaching activities, has now reached a point at which these are beginning to press hard upon the available accommodation and it is hoped that some relief in this direction may be possible in the not too distant future.

#### Examinations made in Bacteriological Department for the City of Liverpool during the year 1936.

Milk (fresh-liquid)—Coli estimation, bacterial count and examination for tubercle bacilli	... ... ... ...	1,156
„ „ —Coli estimation and examination for tubercle bacilli	... ... ... ...	170
„ „ —Bacterial count and coli estimation only	... ...	85
„ „ —Examination for tubercle bacilli only (Veterinary samples)	... ... ... ...	123
„ „ —Inoculation only	... ... ... ...	2
„ (tinned) ... ... ... ...	... ... ... ...	15
		1,551
	Carried forward	...
		1,551

					Brought forward	...	1,551
<b>Foodstuffs :</b>							
Tinned and potted meats for bacterial contamination	...	...	...	...	...	2	
Shell-fish for bacterial contamination	...	...	...	...	...	5	
Ice cream for bacterial content and coli estimation	...	...	...	...	...	72	
Miscellaneous foodstuffs	...	...	...	...	...	29	
						108	
<b>Water—bacterial counts and coli estimation :</b>							
Daily samples from city supply	...	...	...	...	...	301	
Monthly samples	...	...	...	...	...	34	
Baths water	...	...	...	...	...	70	
Miscellaneous samples	...	...	...	...	...	8	
						413	
Rats for plague bacilli	...	...	...	...	...	...	3,331
Swabs for organisms of Vincent's Angina	...	...	...	...	...	...	188
Swabs for diphtheria bacilli	...	...	...	...	...	...	41,690
Diphtheria cultures—virulence tests	...	...	...	...	...	...	597
,,    ,,    —type determination	...	...	...	...	...	...	2,251
Agglutination tests	...	...	...	...	...	...	135
Blood cultures	...	...	...	...	...	...	16
Faeces for organisms of the enteric group	...	...	...	...	...	...	281
Urine for organisms of the enteric group	...	...	...	...	...	...	155
Cerebrospinal fluid for pathogenic organisms	...	...	...	...	...	...	80
Sputum, etc., for tubercle bacilli	...	...	...	...	...	...	2,133
Exudates for anthrax bacilli	...	...	...	...	...	...	47
Vaccines	...	...	...	...	...	...	1
Miscellaneous examinations of tissues, secretions, etc.	...	...	...	...	...	...	692
Tissues from animals for tubercle bacilli	...	...	...	...	...	...	5
						53,674	
<b>Venereal Diseases :</b>							
Wassermann tests	...	...	...	...	...	...	14,583
Kahn tests	...	...	...	...	...	...	513
Meinicke tests	...	...	...	...	...	...	4
Films for gonococci	...	...	...	...	...	...	791
Cultures for gonococci	...	...	...	...	...	...	1
Gonococcus complement fixation tests	...	...	...	...	...	...	667
Exudates for spirochaetes	...	...	...	...	...	...	1
Tissues for spirochaetes	...	...	...	...	...	...	73
						16,633	
<b>Port Sanitary Department :</b>							
Wool and hair for anthrax bacilli and spore bearing organisms	...	...	...	...	...	...	364
Rats for plague bacilli	...	...	...	...	...	...	4,263
Miscellaneous	...	...	...	...	...	...	5
						4,632	

**SUMMARY.**

Specimens of Water, Milk, Foodstuffs and Infectious material	...	...	...	...	...	...	53,674
Venereal Diseases	...	...	...	...	...	...	16,633
Port Sanitary Authority	...	...	...	...	...	...	4,632
						74,939	

**Examinations made in the Bacteriological Department for Authorities and Private Practitioners, etc., outside Liverpool.**

Milk (fresh-liquid)—Coli estimation and bacterial count	...	...	67
"  "  —Coli estimation, bacterial count and examination for tubercle bacilli	...	...	352
"  "  —Coli estimation and examination for tubercle bacilli	...	...	40
"  "  —Examination for tubercle bacilli only	...	...	1,012
			1,471
Water and sewage effluents	...	...	171
Swabs for organisms of Vincent's Angina	...	...	4
Swabs for diphtheria bacilli	...	...	2,472
Diphtheria cultures—virulence tests	...	...	30
"  "  —type determination	...	...	59
Agglutination tests	...	...	68
Faeces and Urine for organisms of the enteric group	...	...	41
Cerebrospinal fluid for pathogenic organisms	...	...	70
Sputum, etc., for tubercle bacilli	...	...	367
Miscellaneous secretions	...	...	161
Miscellaneous samples of foodstuffs	...	...	54
Blood cultures	...	...	5
			4,973

**Venereal Diseases :**

Wassermann tests	...	...	...	...	...	...	...	3,259
Kahn tests	...	...	...	...	...	...	...	5
Films for gonococci	...	...	...	...	...	...	...	470
Gonococcus complement fixation tests	...	...	...	...	...	...	...	168
Cultures for gonococci	...	...	...	...	...	...	...	1
								3,903

**SUMMARY.**

Bacteriological examinations	...	...	...	...	4,973
Venereal diseases examinations	...	...	...	...	3,903
					8,876

Examinations made for the City of Liverpool	...	...	74,939
Examinations made for Authorities and Private Practitioners outside Liverpool	...	...	8,876
			83,815

# **HOUSING**

## HOUSING.

Increased activity in connection with the administration of the Housing Acts took place during the year. Features of this work included the completion of the Overcrowding Survey, and confirmation of the first Re-development plan in the country to deal with an area extending over 50·79 acres.

### Clearance Areas.

The following summary refers to dwelling-houses represented by the Medical Officer of Health during the year 1936 as being unfit for human habitation within the meaning of Section 1 of the Housing Act, 1930:—

Number of dwelling-houses represented during 1936...	...	3,511
„ „ persons occupying the dwelling-houses ...	...	17,923
„ „ clearance areas officially represented ...	...	114
„ „ areas declared compulsory purchase orders ...	...	59
„ „ areas declared clearance orders ...	...	55

### Progress of Slum Clearance.

The following summary indicates the number of houses dealt with during the past three years:—

Year.	No. of Clearance Orders.	No. of Compulsory Purchase Orders.	No. of Dwelling-houses.	No. of Persons to be displaced.	No. of Houses demolished.	No. of Persons re-housed.
1934	60	42	2,757	13,043	—	772
1935	47	60	2,793	14,302	278	3,143
1936	55	59	3,511	17,923	695	5,089
	162	161	9,061	45,268	973	9,004

### Public Inquiries.

During the year under review five Public Inquiries were held in connection with 50 areas, further details of which are set out in the following table:—

No. of Clearance Orders.	No. of Compulsory Purchase Orders.	No. of Dwelling-houses.	No. of Persons to be displaced.
13	37	1,583	8,631

During the year 86 confirmation orders were received in connection with 2,170 dwelling-houses. These orders confirmed the inclusion of 99·4 per cent. of dwelling-houses in the areas.

## CLEARANCE ORDERS.

Clearance Area.							Houses.	Population.
Almonds Green ...	...	...	...	...	...	...	6	18
Avison Street, No. 2	...	...	...	...	...	...	3	10
Blackstock Street	...	...	...	...	...	...	2	7
Back Chester Street	...	...	...	...	...	...	13	76
Byles Street	...	...	...	...	...	...	269	1,224
Campbell Cottages	...	...	...	...	...	...	15	60
Chester Street	...	...	...	...	...	...	4	28
Church Road	...	...	...	...	...	...	2	6
Clark Street	...	...	...	...	...	...	45	220
Clement Street, No. 1	...	...	...	...	...	...	8	36
,, No. 2	...	...	...	...	...	...	3	14
,, No. 3	...	...	...	...	...	...	13	64
Devonshire Place	...	...	...	...	...	...	3	19
Dale View	...	...	...	...	...	...	8	30
Dexter Street	...	...	...	...	...	...	55	306
Eaton Road, North	...	...	...	...	...	...	14	41
Ernest Street	...	...	...	...	...	...	9	66
Fletcher Street	...	...	...	...	...	...	118	605
Fremes Cottages	...	...	...	...	...	...	6	20
Hackthorpe Street	...	...	...	...	...	...	11	31
Gascoyne Street, No. 1	...	...	...	...	...	...	33	177
,, No. 2	...	...	...	...	...	...	13	51
,, No. 3	...	...	...	...	...	...	2	22
Gt. Crosshall Steet, No. 10	...	...	...	...	...	...	2	36
Gilbert Street	...	...	...	...	...	...	42	261
Heyes Cottages	...	...	...	...	...	...	3	11
Hill Street, No. 3	...	...	...	...	...	...	15	89
Hillfoot Road	...	...	...	...	...	...	2	5
Kent Square, No. 1	...	...	...	...	...	...	19	145
,, No. 2	...	...	...	...	...	...	13	100
Mount View, Woolton	...	...	...	...	...	...	37	156
Mark Street	...	...	...	...	...	...	21	89
Mill Street, No. 3	...	...	...	...	...	...	5	11
,, No. 4	...	...	...	...	...	...	6	43
Naylor Street, No. 2	...	...	...	...	...	...	3	23
,, No. 3	...	...	...	...	...	...	2	18
Park Road	...	...	...	...	...	...	3	8
Pitt Street, No. 1	...	...	...	...	...	...	17	104
Providence Buildings	...	...	...	...	...	...	15	35
Rock Street, Woolton	...	...	...	...	...	...	16	68
St. James James Place, No. 1	...	...	...	...	...	...	3	20
,, No. 2	...	...	...	...	...	...	3	14
St. Domingo Road, No. 1	...	...	...	...	...	...	12	58
,, No. 2	...	...	...	...	...	...	13	55
Threlfall Street	...	...	...	...	...	...	9	38
Town Row	...	...	...	...	...	...	22	54
Vauxhall Road, No. 2	...	...	...	...	...	...	6	38
,, No. 3	...	...	...	...	...	...	11	53
,, No. 4	...	...	...	...	...	...	6	17
,, No. 5	...	...	...	...	...	...	5	27
,, No. 6	...	...	...	...	...	...	2	7
,, No. 7	...	...	...	...	...	...	6	26
,, No. 8	...	...	...	...	...	...	5	24
,, No. 9	...	...	...	...	...	...	6	37
Woolton Road, Garston	...	...	...	...	...	...	15	52
TOTAL	...	...	...	...	...	...	1,000	4,853

## COMPULSORY PURCHASE ORDERS.

Clearance Area.							Houses.	Population.
Ambrose Place ...	...	...	...	...	...	...	95	417
Ashfield Street ...	...	...	...	...	...	...	76	343
Athol Street ...	...	...	...	...	...	...	887	4,696
Avison Street, No. 1 ...	...	...	...	...	...	...	249	1,270
Black Horse Lane ...	...	...	...	...	...	...	16	47
Blenheim Street, No. 2 ...	...	...	...	...	...	...	39	218
,, No. 3 ...	...	...	...	...	...	...	2	8
,, No. 4 ...	...	...	...	...	...	...	5	14
Cornwallis Street ...	...	...	...	...	...	...	3	20
Cleveland Square ...	...	...	...	...	...	...	4	20
Cranmer Street, No. 1 ...	...	...	...	...	...	...	9	55
,, No. 2 ...	...	...	...	...	...	...	2	12
,, No. 3 ...	...	...	...	...	...	...	11	54
Duncan Street ...	...	...	...	...	...	...	6	47
Eaton Road ...	...	...	...	...	...	...	3	8
Evans Street ...	...	...	...	...	...	...	45	222
Goodwood Street ...	...	...	...	...	...	...	2	6
Gt. Crosshall Street, No. 8 ...	...	...	...	...	...	...	6	34
,, No. 9 ...	...	...	...	...	...	...	6	44
Gt. George Street, No. 1 ...	...	...	...	...	...	...	3	13
,, No. 2 ...	...	...	...	...	...	...	2	16
Hopwood Street, No. 1 ...	...	...	...	...	...	...	27	177
Limekiln Lane, No. 2 ...	...	...	...	...	...	...	4	19
Lorton Street ...	...	...	...	...	...	...	46	181
Maynard Street, No. 1 ...	...	...	...	...	...	...	29	117
,, No. 2 ...	...	...	...	...	...	...	4	22
,, No. 3 ...	...	...	...	...	...	...	78	354
,, No. 4 ...	...	...	...	...	...	...	7	23
Nelson Street ...	...	...	...	...	...	...	25	251
Park Lane, No. 1 ...	...	...	...	...	...	...	2	8
,, No. 2 ...	...	...	...	...	...	...	13	84
Petton Street, No. 1 ...	...	...	...	...	...	...	9	40
,, No. 2 ...	...	...	...	...	...	...	2	11
Pitt Street, No. 2 ...	...	...	...	...	...	...	10	60
,, No. 3 ...	...	...	...	...	...	...	12	30
,, No. 4 ...	...	...	...	...	...	...	5	41
Raffles Street, No. 1 ...	...	...	...	...	...	...	16	86
,, No. 2 ...	...	...	...	...	...	...	2	6
Raymond Street, No. 1 ...	...	...	...	...	...	...	41	185
,, No. 2 ...	...	...	...	...	...	...	8	41
,, No. 3 ...	...	...	...	...	...	...	15	78
,, No. 4 ...	...	...	...	...	...	...	15	81
St. James Street, No. 1 ...	...	...	...	...	...	...	3	13
,, No. 2 ...	...	...	...	...	...	...	3	19
Scotland Road, No. 3 ...	...	...	...	...	...	...	2	7
Seddon Street ...	...	...	...	...	...	...	2	8
Tatlock Street, No. 1 ...	...	...	...	...	...	...	3	15
,, No. 2 ...	...	...	...	...	...	...	78	433
Tenterden Street ...	...	...	...	...	...	...	5	39
Torr Street ...	...	...	...	...	...	...	259	1,110
Upper Frederick Street, No. 3 ...	...	...	...	...	...	...	179	1,009
,, No. 4 ...	...	...	...	...	...	...	5	43
,, No. 5 ...	...	...	...	...	...	...	83	587
Upper Pitt Street, No. 1 ...	...	...	...	...	...	...	5	50
,, No. 2 ...	...	...	...	...	...	...	17	142
Vauxhall Road, No. 10 ...	...	...	...	...	...	...	7	76
,, No. 11 ...	...	...	...	...	...	...	11	45
White Street ...	...	...	...	...	...	...	2	15
York Street ...	...	...	...	...	...	...	6	—
TOTAL ... ... ...							2,511	13,070

### **Individual Unfit Houses.**

Since operations were commenced under Section 19, Housing Act, 1930; the Medical Officer of Health has submitted representations in connection with 509 individual houses to the Housing Committee which, in his opinion, were unfit for human habitation, and the position in respect to these houses is as follows:—

	No. of Houses.
Demolition Orders made ... ... ... ...	268
Undertaking given not to use for human habitation	64
Plans submitted in respect of re-construction ...	176
Number adjourned ... ... ... ...	1

### **Closing Orders in respect of parts of Buildings.**

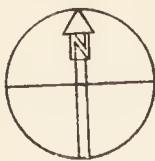
During the year, 635 inspections of underground dwellings were carried out, and in 67 instances closing orders were made prohibiting the use of the part of the building or of the room for any purpose other than a purpose approved by the Local Authority.

### **Central Re-development Area.**

As the result of an inspection carried out in a large central area of the City, it became apparent that there existed therein the conditions set out in Section 13 of the Housing Act, 1935, and it appeared that this area would form a typical Re-development Area.

A plan of the area dealt with is given on page 272. The area which is chiefly residential in character is situated almost in the middle of the industrial and commercial portion of the city. This part of the city is very densely populated, and the insanitary houses in the area are inhabited by persons who for various reasons are unable to live far from their present homes. Owing to the rapid development of this area there is a lack of suitable sites for houses into which the tenants might be transferred, having regard to the fact that it is necessary to re-house the tenants near their place of work.

CITY OF LIVERPOOL  
CENTRAL REHOUSING AREA  
AND  
THE BEAU STREET AREA.



## AND THE BEAU STREET AREA

AND

## THE BEAU STREET AREA .

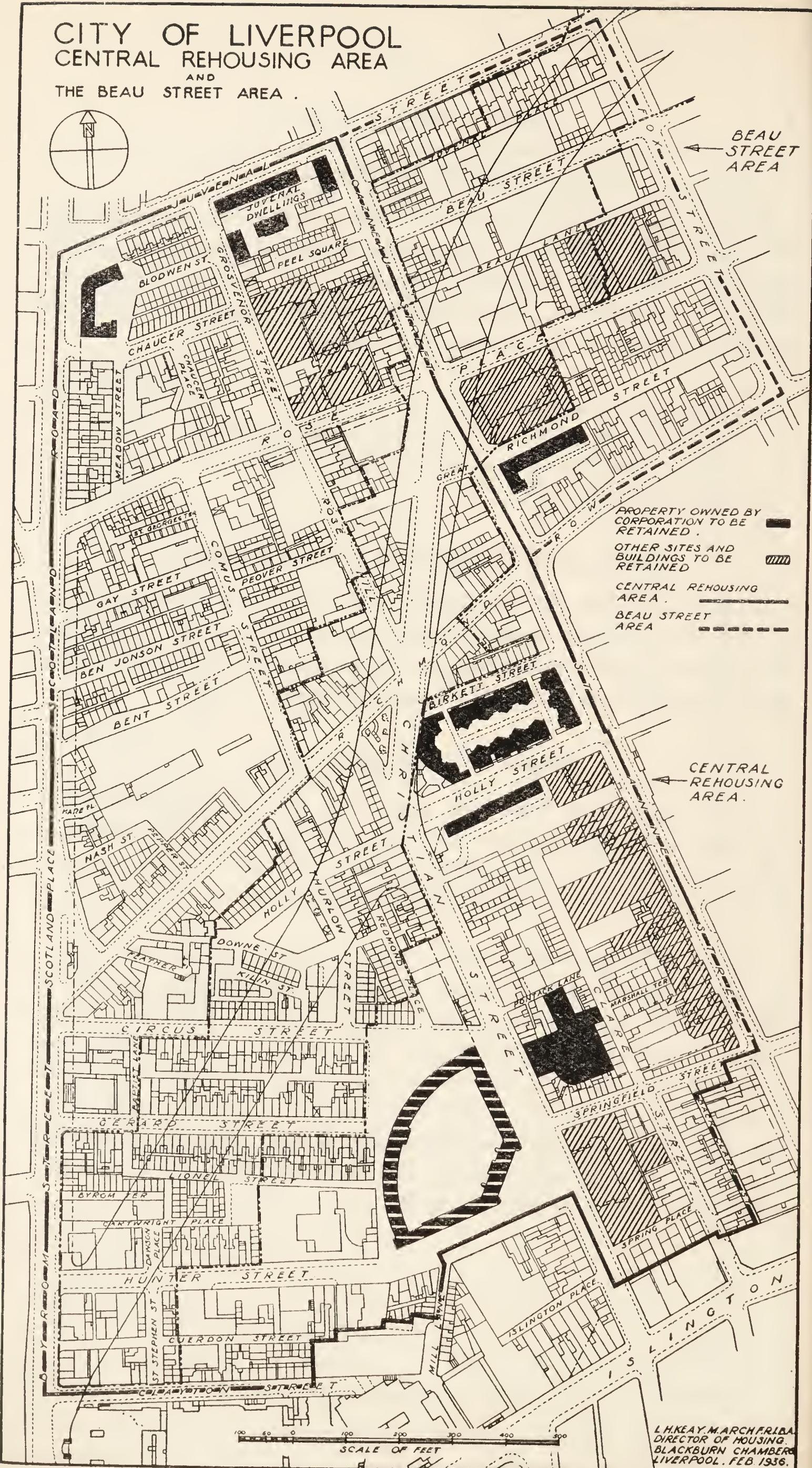
PROPERTY OWNED BY  
CORPORATION TO BE  
RETAINED.

**OTHER SITES AND  
BUILDINGS TO BE  
RETAINED**

CENTRAL REHOUSING AREA.

BEAU STREET  
AREA

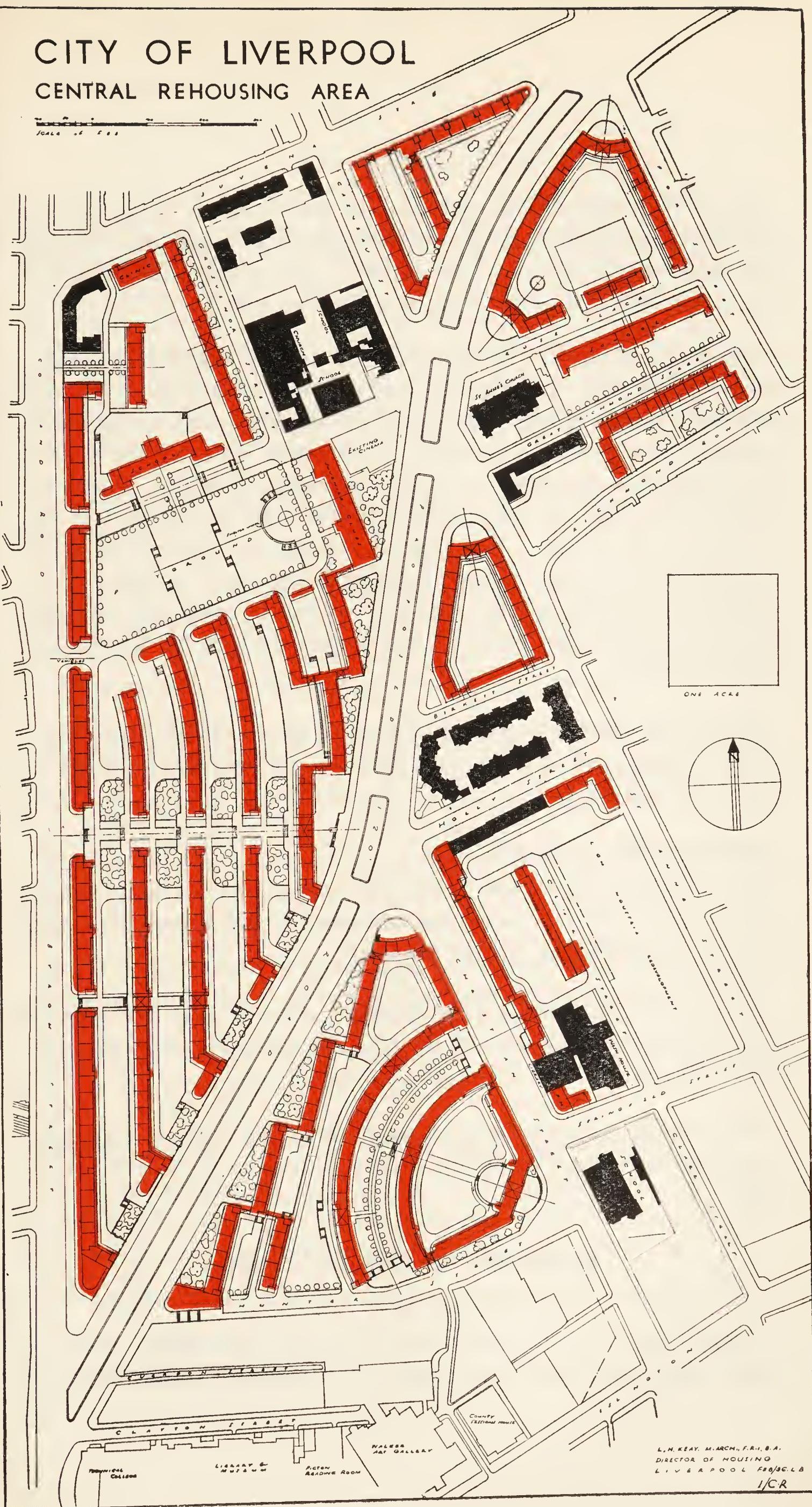
**CENTRAL  
REHOUSING  
AREA.**



# CITY OF LIVERPOOL

## CENTRAL REHOUSING AREA

SCALE OF 1 INCH = 500 FEET



L.H. KEAY, M.ARCH., F.R.I.B.A.  
DIRECTOR OF HOUSING  
LIVERPOOL Feb/86.G.L.B

1/C.R

The area contained 1,395 working-class houses, and of these, 923 were represented as houses unfit for human habitation, under the Housing Act, 1930, and 383 houses, or 27·4 per cent. were overcrowded according to the standard laid down in the Housing Act, 1935.

The Medical Officer of Health was of the opinion that for the purpose of Section 13 of the Housing Act, 1935, 877 or 62·8 per cent. of the total number of houses in the proposed Re-development Area could not be rendered fit for human habitation at a reasonable expense. The population of the area as a whole was very congested, 879 houses or 63·0 per cent. of the total number of houses in the Area being more or less seriously overcrowded. The rate of congestion varied from 35 to 120 houses to the acre, the computation being based on areas which included the moiety of the streets co-extensive with the congested properties and the full widths of any streets which passed through the congested areas.

There were only four available sites in the whole Re-development Area, and the areas of these sites were 220, 243, 422 and 1,074 square yards, respectively.

#### **RE-DEVELOPMENT OF THE AREA.**

The Central Re-development Scheme extends over an area of 50·79 acres, and will provide re-housing accommodation for more than 6,000 persons in buildings of modern standard.

The Director of Housing has provided a plan (see page 273) showing the proposed re-development of the area, the re-housing accommodation chiefly consisting of five-storey blocks of flats.

The Inquiry into the Re-development Plan was held on 14th July, 1936, and the Minister of Health confirmed the plan on 23rd December, 1936.

#### **Replacement of Insanitary Houses.**

During 1936, the following flats were completed and occupied:—

**CARYL STREET AND GRAFTON STREET.**—The complete scheme is for 312 flats, comprising 12 bed-living room, 38 one bedroom, 112 two bedroom,

114 three bedroom and 36 four bedroom types, and of these, 152 flats were completed and occupied during 1935. The remaining 160 flats will be completed in the early part of 1937.

**MYRTLE STREET.**—180 flats, comprising 33 one bedroom, 50 two bedroom, and 97 three bedroom types, and 2 shops, were completed and occupied. The complete scheme is for 344 flats, and building operations are proceeding on the remaining 164 flats.

**NELSON STREET.**—25 flats, comprising 10 two bedroom and 15 three bedroom types.

**GERARD STREET.**—138 flats, comprising 10 one bedroom, 23 two bedroom, 95 three bedroom and 10 four bedroom types, were completed and occupied. This is the first block to be completed in the Central Re-development Area where it is intended to erect 1,840 flats.

**HIGHFIELD STREET.**—A block of 66 flats, comprising 25 two bedroom, 33 three bedroom, and 8 four bedroom types, was completed and occupied during the year. The complete scheme is for 383 flats.

During 1936 the commitments of the Corporation as to Improvement and Reconstruction Schemes under the Housing Act, 1923, were completed with the erection of the following:—

**QUEEN ANNE STREET SCHEME.**—Two blocks containing 161 flats, comprising 34 one bedroom, 20 two bedroom and 107 three bedroom types.

**BURLINGTON STREET SCHEME.**—A block of 18 flats comprising 4 two bedroom and 14 three bedroom types.

Building operations now proceeding include the following:—

**CARYL STREET AND GRAFTON STREET.**—The remaining 164 flats, comprising 6 bed living room, 20 one bedroom, 56 two bedroom, 60 three bedroom and 18 four bedroom types, were nearing completion at the end of 1936.

**MYRTLE STREET.**—164 flats required to complete the scheme, comprising 11 one bedroom, 50 two bedroom, 93 three bedroom and 10 four bedroom types.

GERARD STREET.—40 flats, comprising 10 two bedroom and 30 three bedroom types, were nearing completion at the close of the year.

QUEEN ANNE STREET.—75 flats, comprising 16 one bedroom, 25 two bedroom, 33 three bedroom and 1 four bedroom types.

WILBRAHAM STREET.—30 flats, comprising 1 one bedroom, 5 two bedroom and 24 three bedroom types, completing the whole scheme of 60 flats.

ST. DOMINGO ROAD.—194 flats, comprising 12 one bedroom, 118 two bedroom, 36 three bedroom and 28 four bedroom types.

UPPER FREDERICK STREET.—72 flats, comprising 2 bed living room, 12 one bedroom, 16 two bedroom, 37 three bedroom and 5 four bedroom types, were almost completed at the end of 1936.

HILL STREET.—56 flats, comprising 8 one bedroom, 25 two bedroom, 12 three bedroom and 11 four bedroom types.

HORATIO STREET.—44 flats, comprising 16 one bedroom, 8 two bedroom and 20 three bedroom types.

WESTMORELAND PLACE.—127 flats, comprising 8 one bedroom, 50 two bedroom and 69 three bedroom types.

NORTHUMBERLAND STREET.—124 flats, comprising 60 two bedroom, 44 three bedroom and 20 four bedroom types.

### New Dwellings in Suburbs.

In the year 1919 the Housing Committee commenced to erect houses in the suburbs, and up to the end of 1936 27,054 houses and 451 flats have been completed.

Building operations were also proceeding at the end of 1936 on four estates on the outskirts, 536 houses being in course of construction on Finch House Estate, 88 houses on Longview Farm Estate, 20 Cottage Flats at Woolton and 610 houses on the Sparrow Hall Estate.

The following table gives details relating to the districts where these houses have been erected, and the accommodation provided :—

			“A” (Non-parlour)	“B” (Parlour.)	Total.
Elms House Estate	...	...	252	—	252
Larkhill Estate	...	...	476	1,834	2,310
Fazakerley Estate	...	...	1,030	410	1,440
Edge Lane Drive Estate	...	...	560	311	871
Walton-Clubmoor Estate	...	...	1,525	1,671	3,196
Springwood Estate	...	...	250	1,249	1,499
Partly developed Estates	...	...	—	554	554
Woolton	...	...	125	—	125
Knotty Ash Estate	...	...	389	263	652
Highfield Estate	...	...	—	618	618
Pinehurst Road Estate	...	...	287	395	682
King Street, etc., Garston	...	...	76	—	76
Ronald Street	...	...	78	—	78
Norris Green Estate	...	...	4,724	2,965	7,689
Dovecot Estate	...	...	2,331	686	3,017
Speke Estate	...	...	286	—	286
Knowsley Estate	...	...	863	—	863
Total within the area of the city	...		13,252	10,956	24,208
Knowsley Estate	...	...	1,794	36	1,830
Huyton Farm Estate	...	...	937	79	1,016
Total outside the city boundary	...		2,731	115	2,846
<b>TOTAL</b>	...	...	<b>15,983</b>	<b>11,071</b>	<b>27,054</b>

All these houses are completed and occupied.

At Larkhill and Springwood Estates 120 and 85 flats, respectively, have also been erected, as well as 246 flats at Speke Road Gardens, Garston. A further 15 flats are being erected at Larkhill Estate.

During the same period (1919-1936) 23,534 houses have been erected by private enterprise, and of these 4,294 were eligible for subsidy under the Housing Acts of 1923 and 1924.

### Re-housing in Old City Area.

The number of dwellings provided by the Corporation up to the end of 1936 is 5,755, their situations and dates of opening are as follows:—

Situation.	Date opened.	Number of tenements (Including houses with shops attached).
St. Martin's Cottages ...	1869	124
Victoria Square ...	1885	270
Juvenal Dwellings ...	1891	101
Arley Street ...	1897 1902/3	46
Gildart's Gardens ...	1897 1904	229
Dryden Street ...	1901	182
Kempston Street ...	1902	79
Kew Street ...	1902/3	114
Adlington Street Area ...	1902/3	273
Stanhope Cottages ...	1904	60
Mill Street ...	1904	55
Hornby Street ...	1904 1906/7	455
Clive Street and Shelley Street ...	1905	83
Eldon Street ...	1905	12
Upper Mann Street ...	1905/6	88
Combermere Street ...	1909	49
Burlington Street ...	1910	114
Saltney Street ...	1911	48
Grafton Street ...	1911	60
Bevington Street Area ...	1912	223
Northumberland Street Area ...	1913	68
St. Anne Street Area ...	1914	78
Gore Street ...	1916	24
Jordan Street ...	1916	31
Sparling Street ...	1916	16
Penrhyn Street ...	1921	26
Mason Street ...	1921	28
Blenheim Street ...	1923	18
Prince Edwin Street ...	1924	60
St. Augustine Street ...	1925	6
Bond Street ...	1925	24
Pitt Street ...	1928	48
South Hill Road ...	1928	198
Melrose Road ...	1929	260
Rankin Street ...	1929	46
Hopwood Street ...	1930	30
Holly Street ...	1931	34
Burlington Street ...	1931/6	209
Great Richmond Street ...	1931	21
Beloë Street ...	1931	69
Burnet Street ...	1932	16
Dingle Mount ...	1932	118
Carried forward ...		4,093

Situation.	Brought forward	Date opened.	Number of tenements (Including houses with shops attached).
Kew Street ...	...	1932	4,093
Queen Anne Street ...	...	1933/6	9
Blackstock Gardens ...	...	1934	374
Trowbridge Street ...	...	1934/5	134
Dingle Road ...	...	1934	316
St. James' Street ...	...	1934	14
Chaucer Street ...	...	1935	54
Fontenoy Street ...	...	1935	35
Wilbraham Street ...	...	1935	63
High Street, Wavertree ...	...	1935	30
Caryl Street-Grafton Street ...	...	1936	72
Myrtle Street ...	...	1936	152
Gerard Street ...	...	1936	180
Highfield Street ...	...	1936	138
Nelson Street ...	...	1936	66
			25
<b>TOTAL</b> ...	...		<b>5,755</b>

### General Statistics.

Area of City ...	...	...	27,321 acres.
Estimated Population ...	...	...	867,110
Number of inhabited houses at 31st December, 1936			193,709
Number of structurally separate dwellings occupied (1931 Census) ...	...	...	173,938
Rateable value ...	...	...	£6,678,280
Sum represented by a Penny Rate ...	...	...	£24,160
Number of New Houses erected during the year :—			
(i) By the Local Authority ...	...	...	1,827
(ii) By other bodies or persons ...	...	...	3,066
			4,893

### Housing Statistics.

#### 1. Inspection of Dwelling-houses during the Year.

- (1) (a) Total number of dwelling-houses inspected for housing defects (under Public Health or Housing Acts) ... ... ... 89,683

280

(b) Number of inspections made for the purpose	...	...	...	...	...	167,479
(2) (a) Number of dwelling-houses (included under sub-head (1) above) which were inspected and recorded under the Housing Consolidated Regulations, 1925..						11,545
(b) Number of inspections made for the purpose	...	...	...	...	...	15,015
(3) Number of dwelling-houses found to be in a state so dangerous or injurious to health as to be unfit for human habitation	...					3,532
(4) Number of dwelling-houses (exclusive of those referred to under the preceding sub-head) found not to be in all respects reasonably fit for human habitation	...	...	...	...		44,274

2. *Remedy of Defects during the year without Service of Formal Notices.*

Number of defective dwelling-houses rendered fit in consequence of informal action by the Local Authority or their officers	...	20,978
---	-----	--------

3. *Action under Statutory Powers during the Year.*

(a) *Proceedings under Sections 17, 18 and 23 of the Housing Act, 1930.*

(1) Number of dwelling-houses in respect of which notices were served requiring repairs	...	612
(2) Number of dwelling-houses which were rendered fit after service of formal notices—		
(a) by owners	...	609
(b) by local authority in default of owners	..	Nil.

(b) *Proceedings under Public Health Acts.*

(1) Number of dwelling-houses in respect of which notices were served requiring defects to be remedied ... ... ... ... 36,258

(2) Number of dwelling-houses in which defects were remedied after service of formal notices :—

(a) By owners ... ... ... ... 15,280

(b) By local authority in default of owners ... ... ... ... Nil.

(c) *Proceedings under Section 19 and 21 of the Housing Act, 1930.*

(1) Number of dwelling-houses in respect of which Demolition Orders were made ... ... 18

(2) Number of dwelling-houses demolished in pursuance of Demolition Orders ... ... 30

(d) *Proceedings under Section 20 of the Housing Act, 1930.*

(1) Number of separate tenements or underground rooms in respect of which Closing Orders were made ... ... ... ... ... 67

(2) Number of separate tenements or underground rooms in respect of which Closing Orders were determined, the tenement or room having been rendered fit ... ... ... Nil

**Housing of the Working Classes.**

Number of Houses owned by the Local Authority distinguishing those built in the last two years and held as under :—

Number of houses owned by the Local Authority... 33,247

„ built in the last two years under :—

1. Part III of the Housing Act, 1925 ...	Nil.
2. Part II do. ...	2,236
3. Other powers ... ... ... ...	1,064

#### *Description of Flats.*

Number of 1-roomed dwellings ... ... ... ...	215
Number of 2-roomed dwellings ... ... ... ...	1,470
Number of 3-roomed dwellings ... ... ... ...	1,980
Number of 4-roomed dwellings ... ... ... ...	2,000
Number of 5-roomed dwellings ... ... ... ...	90
	<hr/>
	5,755

Number of self-contained dwellings (included in above) 190  
Number of lock-up shops ... ... ... ... 36

#### *Rentals.*

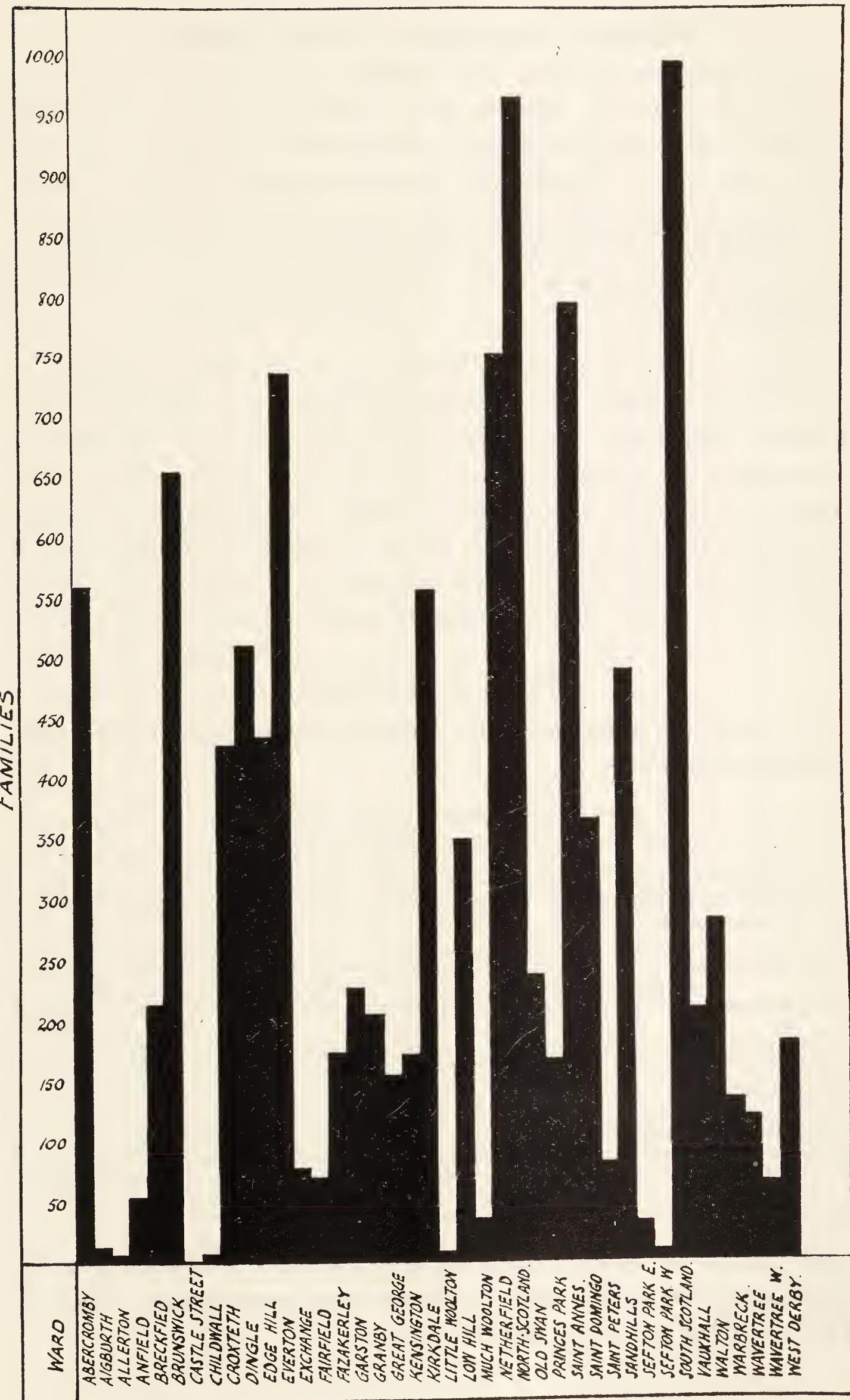
The rentals of the flats vary from 3s. 2d. to 9s. 10d., and those of the self-contained cottages from 8s. 1d. to 14s. 0d. per week.

#### **Survey of Overcrowding.**

An inspection of houses up to and including a rateable value of £16, as well as of other houses known to be let to more than one family, was carried out during the early part of the year, in accordance with the requirements of the Housing Act, 1935, in order to ascertain the number of dwelling-houses which were overcrowded. 155,399 houses were surveyed, of which 11,554 or 7·43 per cent. were found to be overcrowded. This figure does not include 23 cases of overcrowding due to non-separation of sexes. The number of units occupying these overcrowded houses was 59,260, showing that an average of 5·12 units occupy each overcrowded house, and 2·18 units occupy each room in the overcrowded houses.

The greatest proportion of overcrowding exists in South Scotland Ward, next in order comes North Scotland Ward, with St. Anne's Ward as third.

CHART SHOWING EXTENT OF OVERCROWDING IN THE VARIOUS WARDS.



### Estimate of the number of houses required.

After allowing for the "up filtration" of certain overcrowded families, the following estimate of the number of houses required was prepared. This estimate, adjusted to take account of the difference between the overcrowding standard and the standard of Section 37 of the Housing Act, 1930, is only approximate, but is sufficient to form the basis of a consideration of the first re-housing proposals. On this basis the number and type of new houses required would be 156 A2, 940 A3, 1,230 B4.

For the purpose of dealing as early as possible with the most serious cases of overcrowding, a supplementary report was submitted to the Housing Committee. This report gave full details of 190 families overcrowded to an extent of 4 or more units and which had been overcrowded for a period of five years or more. Of this number, 42 houses belonged to the Local Authority, 78 houses were found to be scheduled for clearance under the Housing Act, and in 5 cases members of the families were known to be suffering from tuberculosis.

### Erection of New Houses.

The following information has been kindly supplied by the City Building Surveyor :—

#### *Return of Houses erected 1931-1936.*

Number of Rooms, (Exclusive of bathrooms, sculleries, etc.)	1931	1932	1933	1934	1935	1936
4 Rooms or less ... ...	1,547	1,558	1,526	2,902	1,646	2,225
5 or 6 Rooms ... ...	1,499	1,693	1,595	2,298	2,924	2,632
7 or 8 Rooms ... ...	132	94	148	129	93	36
9 or 10 Rooms ... ...	3	5	4	4	3	—
More than 10 Rooms ... ...	1	—	1	—	—	—
Totals ... ... ...	3,182	3,350	3,274	5,333	4,666	4,893

The numbers of houses which have been erected by or for the Housing Committee, and which form parts of Government-assisted schemes, during the last six years, are :—

1931 = 1,810.

1932 = 1,882 (includes 179 flats).

1933 = 1,402 (,, 318 , ).

1934 = 1,977 (,, 337 , ).

1935 = 1,149 (,, 698 , ).

1936 = 1,087 (,, 719 , ).

*Number of Houses erected and taken down during the year 1936.*

Sub-Registration Districts.	Number Erected.	Number Taken Down.
Exchange ...	384	170
Abercromby	180	267
St. Peters ...	119	197
Toxteth Park	89	110
Edge Hill and Sefton Park	3	—
Wavertree ...	1,579	78
Fazakerley	532	—
Walton and Walton Park	447	—
Kirkdale ...	4	3
Netherfield	—	—
Everton	—	47
West Derby	440	53
Total within the area of the city	3,777	925
Finch House Estate	376*	—
Longview Farm Estate	740*	—
Total outside the city boundary...	1,116	—
	4,893	925

\* Outside the City Boundary.

Of the 4,893 dwelling-houses erected during 1936, 1,827 were built under the direction of the Housing Committee, including 719 flats and tenements.

RESIDENTIAL FLATS.—During the year 1936, 34 houses were converted into 108 residential flats, giving a net increase of 74 "new" dwelling-houses.

**LIVERPOOL CORPORATION ACT, 1936.****Part VIII, Sections 59 to 60; Part IX, Sections 63 to 86.**

The following is a summary of sections of the Liverpool Corporation Act, 1936, relating to sewers and drains, infectious disease and sanitary provisions.

SEC. 59.—Twenty-four hours' notice must be given to the Corporation before the repairing of any drain communicating with any sewer of the Corporation.

SEC. 60.—The owner or occupier of premises in, under, or attached to which there is, to his knowledge, a disused drain shall notify in writing the existence of such drain to the Corporation.

SEC 63.—Gives the Medical Officer, on a warrant from a Justice of the Peace, power of entry into houses for the examination of persons alleged to be suffering from infectious disease.

SEC 64.—A Court of Summary Jurisdiction, on the certificate of the Medical Officer, may make on order for the removal (to a suitable hospital, infirmary or other institution or other suitable place) of any person who is aged or infirm or physically incapacitated and resides in premises which are insanitary and who is not receiving proper care and attention.

SEC. 65.—When the Medical Officer certifies that a dwelling-house is insanitary, due to the neglect of the occupier on account of infirmity or mental incapacity, the Court on application may make an order for the removal of such occupier to an institution or other suitable place, to enable the Corporation to cleanse and disinfect the house.

SEC. 66.—The Corporation, on the certificate of the Medical Officer that a person is suffering from tuberculosis of the respiratory tract and is in an infectious state, may obtain an order prohibiting him from the cooking, preparation or handling of food intended for consumption by persons other than in his own household.

SEC. 67.—Every medical practitioner attending on a person suffering from food poisoning shall send a notification to the Medical Officer forthwith.

SEC. 68.—Powers contained in Section 72 of the Public Health Act, 1925, are now extended to include a yard in which food is prepared for sale, or is sold or stored or kept with a view to future sale.

SEC 69.—Powers contained in Sections 116 to 118 of the Public Health Act, 1875, as amended by Section 28 of the Public Health Acts Amendment Act, 1890, are extended to authorise the examination of any cart or other vehicle or any basket, sack, bag or parcel in which there is an article of food intended for sale or is in the course of delivery after sale for human food.

SEC 70.—Extends the powers of the court in reference to proceedings under Section 91 of the Public Health Act, 1875, regarding delay in complying with notices requiring the abatement of nuisances.

SEC. 71.—Empowers the Corporation to require the repair and re-decoration of houses occupied by persons of the working classes.

SEC. 72.—The Corporation may refuse to register or renew the registration of any house as a common lodging-house unless they are satisfied that the premises are suitably equipped for use and occupation as such, and that the use of the premises as a common lodging-house is not likely to cause inconvenience or annoyance to the inhabitants in the neighbourhood.

Notwithstanding anything in the Public Health Acts the registration of a common lodging-house shall remain in force only for such time (not exceeding one year) as may be fixed by the Corporation, but may be renewed by them from time to time.

SEC 73.—Section 80 of the Public Health Act, 1875, is extended to include the making of bye-laws for the prevention of fire in common lodging-houses and also for the exhibition of such bye-laws in common lodging-houses.

SEC. 74.—Provides that the Corporation shall give notice of the two last preceding sections to keepers of common lodging-houses.

SEC 75.—Gives the Corporation power to make bye-laws to prevent meat from being brought into the city and offered for sale for human food until after inspection by an officer of the Corporation.

SEC. 76.—Provides for the registration of hawkers of meat, fish, fruit and vegetables, together with the registration of the premises used by hawkers for the storage of food.

SEC. 77.—Empowers the Corporation to prohibit the sale for human consumption of shell-fish which is liable to cause disease or which is likely to endanger the public health.

SEC. 78.—Provides for the registration of manufacturers and dealers in ice-cream and manufacturers of preserved meats together with the registration of their premises.

SEC. 79.—(i) Provides for the notification to the Medical Officer by dealers or manufacturers of ice-cream of all cases of infectious diseases occurring amongst their employees or in persons residing in any premises used for the manufacture of ice-cream.

(ii) Powers of inspection contained in Section 72 of the Public Health Act, 1925, are extended to include the premises of ice-cream dealers and manufacturers.

SEC. 80.—Empowers the Corporation to close premises used as private slaughter-houses subject to the payment of compensation.

SEC. 81.—(i) The Corporation may require the owner or occupier of any dwelling-house, warehouse or shop to discontinue the use of ash-pits and to substitute dust-bins.

(ii) The deposition in dust-bins of house refuse of a liquid character is prohibited.

SEC. 82.—The Corporation may require the owner of any flat or tenement to keep on the ground level in an enclosure accessible to the open-air, receptacles for the deposit of refuse.

SEC. 83.—No dealer shall sell or expose for sale any second-hand furniture, mattress, bed-linen or similar articles if the same are to his knowledge infested with bed-bugs or if by taking reasonable precautions he could have known them to be so infested.

SEC. 84.—Section 45 of the Public Health Act, 1925, with regard to verminous articles is extended to include any second-hand furniture, mattress, bed-linen or similar articles.

SEC 85.—Amends sub-section (1) of Section 472 (furnaces to consume their own smoke) of the Liverpool Corporation Act, 1921, defining the area of the Port to which this section applies.

SEC. 86.—The Corporation may exercise their powers with regard to the provision of a proper water supply (Section 62 of the Public Health Act, 1875) and the provision of sanitary conveniences in workshops and manufactories (Section 22 of the Public Health Acts Amendment Act, 1890) on the report of the Medical Officer or the Sanitary Inspector as well as on the report of the Surveyor.

### **WELFARE OF THE BLIND.**

During 1936, 358 applicants for benefits due to the blind under the Blind Persons Act, 1920, were examined by ophthalmic surgeons. Of these, 208 were found to be blind within the meaning of the Act and 150 were not blind. The corresponding figures for 1935 were 343 applicants, of whom 214 were blind.

The re-examination of partially-sighted "blind" persons when there was reason to believe that the necessary condition of blindness was not fulfilled or where there was not in existence a certificate of blindness from an ophthalmic surgeon, was continued during the year and 4 persons were re-examined. Of these 3 were found to be no longer blind and their names were removed from the register of blind persons.

In Table I is given the number of registered blind persons in Liverpool.

**TABLE I.**  
**PERSONS REGISTERED AS BLIND.**

Age.	Males.	Females.	Total.
0 +	2	2	4
5 +	25	14	39
16 +	14	9	23
21 +	145	107	252
40 +	117	94	211
50 +	276	283	559
65 +	83	119	202
70 +	205	366	571
	867	994	1,861

In Table II, 1,818 blind persons who are 16 years of age and over, are classified according to their ability to work, etc.

TABLE II.  
BLIND PERSONS 16 YEARS OF AGE AND OVER.

	Males.	Females.	Total.
Employed ... ... ... ... ... ...	150	50	200
Trained but not employed ... ... ... ...	12	4	16
Under training ... ... ... ...	16	11	27
Trainable but not under training ... ... ...	15	4	19
Unemployable ... ... ... ...	647	909	1,556
	840	978	1,818

In Table III, 234 blind persons who are suffering from some other serious physical defect, or who are mentally defective, are analysed.

TABLE III.  
BLIND PERSONS WHO ARE PHYSICALLY OR MENTALLY DEFECTIVE.

	Males.	Females.	Total.
Mentally defective ... ... ... ... ...	38	15	53
Physically defective ... ... ... ...	30	33	63
Deaf ... ... ... ... ...	37	50	87
Combinations of above disabilities ... ... ...	13	18	31
	118	116	234

### CARE OF ANIMALS.

The Corporation of Liverpool makes yearly donations to the Royal Society for the Prevention of Cruelty to Animals, Liverpool Branch, and to the Liverpool Dogs' Home, on account of the work done by those institutions, and the following brief reports are therefore of interest.

### LIVERPOOL CATS' SHELTERS.

The year 1936 shows a small diminution in the total of unwanted animals received for humane lethalling, the figure being 34,998. The clearance areas again yielded a certain number and it is to be hoped that as slum areas of the City are cleared the number of unwanted animals will diminish. Moreover, the Society's policy of encouraging the public to send newborn litters direct to the shelters should also bear fruit in this direction as time goes on. The collecting van brought in 12,355 of these animals, all calls being made by express wish of owners or other interested persons.

As 1936 drew to a close preparations were well advanced for removing the principal shelter from the old Russell Street premises to 11, Mount Vernon Road, a roomy villa purchased by the Society for the purpose. Communications and requests for the van to call should be sent direct to the caretaker, at that address (telephone, Royal 4174). Other shelters are at 90, Smith Street, Kirkdale, Liverpool, 4, and at 230, Mill Street, Toxteth, Liverpool, 8. Boarder cats are received at Mount Vernon Road, and at Smith Street.

### LIVERPOOL HORSES' REST.

The year recorded 114 animals, including a number of shore donkeys, grazing on the pastures for different periods. A few of the animals are pensioners, but most of them are the property of working people, and are sent there to recuperate. Owing to the encroachment of building operations the Society is moving from Broadgreen to Lodge Farm, Halewood, and when this report is published it is anticipated that the work will be in full swing on the new estate. Applications for the reception of horses, ponies and donkeys should be addressed to the Society's office.

### LIVERPOOL ANIMAL CLINIC.

The extended accommodation and improved equipment at the new premises at Larch Lea abundantly justified themselves during the year 1936. The total number of attendances at this and the other two Clinics conducted by the Society is now over 1,000 per month, all being on the animals of humble owners, and the work conducted by qualified Veterinary Surgeons acting in an honorary capacity. There were 55 major operations during 1936, and 205 in-patients were attended to.

All the above institutions are conducted by the R.S.P.C.A., Liverpool Branch, 3, Crosshall Street, Liverpool, 1 (Tel. Central 645).

#### LIVERPOOL DOGS' HOME.

The total number of animals dealt with during 1936 was 9,671 against 9,170 in 1935, a substantial increase. Of the animals thus handled, 747 were restored to their owners, 767 were sold to approved homes, and 542 boarders were accommodated. The number cremated in the incinerator was 114. It is to be observed that the number of unwanted animals brought direct to the Home largely by the Home's own van was 5,153, whereas the number received from the streets by the Police and thence conveyed to the Home was 4,087. It is the Committee's policy to do everything they can to increase the former figure and diminish the latter figure, i.e., to reduce to a minimum the number of animals which find their way on to the streets. For this reason they urge that newborn litters be sent direct to the Home unless good homes are assured. The services of the collecting van can be obtained by communicating with the keeper at Edge Lane, Liverpool, 7, or by telephoning Old Swan 1340. The city office is at 3, Crosshall Street, Liverpool, 1. The Liverpool Dogs' Home is an independent charity not connected with any other animal society.

## CITY OF LIVERPOOL.

## Vital Statistics of the Whole District during 1936 and 5 previous years.

YEAR.	Population estimated to Middle of each year.	BIRTHS.				TOTAL DEATHS REGISTERED IN THE DISTRICT.		TRANSFERABLE DEATHS.		NET DEATHS BELONGING TO THE DISTRICT.			
		Uncor-rected Number.		Net.		Number.	Rate.	of Non-residents registered in the District.	of Residents not registered in the District.	Under 1 year of age.		At all ages.	
		Number.	Rate.	Number.	Rate.					Number.	Rate per 1000 Net Births.	Number.	Rate.
1931.....	856483	18973	18626	21·7	13024	15·2	1138	357	1740	93	12243	14·3	
1932.....	861935	18548	18149	21·0	12044	13·9	1038	364	1646	91	11370	13·2	
1933.....	866013	17457	16929	19·5	13076	15·1	1032	400	1655	98	12444	14·4	
1934.....	866013	18244	17593	20·3	12016	13·9	1062	365	1418	81	11319	13·1	
1935.....	867110	17998	17347	20·0	12288	14·2	1170	329	1445	83	11447	13·2	
1936.....	867110	18398	17403	20·1	12118	13·1	1290	355	1311	75	11183	12·9	

## APPENDIX B.

## CITY OF LIVERPOOL.

## Birth-Rates, Death-Rates, and Analysis of Mortality during the year 1936.

England and Wales, London, 122 County Boroughs and Great Towns, and 143 Smaller Towns. (Provisional Figures)

	Rate per 1,000 Population.	Annual Death-Rate per 1,000 Population.											Rate per 1,000 Live Births.	Percentage of Total Deaths.			
		Live Births.	Still-births.	All Causes.	Typhoid and Paratyphoid Fevers.	Small-pox.	Measles.	Scarlet Fever	Whooping Cough.	Diphtheria.	Influenza.	Violence.	Diarrhoea and Enteritis (under two years).	Total Deaths under one year.	Certified by Registered Medical Practitioners.	Inquest Cases.	Certified by Coroner after P.M. No Inquest.
England and Wales ...	14·8	0·61	12·1	0·01	...	0·07	0·01	0·05	0·07	0·14	0·52	5·9	59				
122 County Boroughs and Great Towns, including London ...	14·9	0·67	12·3	0·01	...	0·09	0·01	0·06	0·08	0·14	0·45	8·2	63				
143 Smaller Towns (Resident Populations 25,000 to 50,000 at Census 1931) .....	15·0	0·64	11·5	0·00	...	0·04	0·01	0·04	0·05	0·15	0·39	3·4	55				Not available.
London ....	13·6	0·53	12·5	0·01	...	0·14	0·01	0·06	0·05	0·14	0·52	14·4	66				
*Liverpool ....	20·1	0·81	12·9	0·00	...	0·20	0·00	0·12	0·16	0·07	0·42	7·3	75	92·8	4·1	2·9	0·2

The maternal mortality rates for England and Wales are as follows: per 1,000 Total Births ... 1·34 2·31 3·65

\* The rates for Liverpool have been calculated on a population estimated locally to the middle of 1936.



## CITY OF LIVERPOOL.

Causes of, and ages at, Death during the year 1936.

Causes of Death.	At all ages.	NET DEATHS AT VARIOUS AGES, OF "RESIDENTS," WHETHER OCCURRING WITHIN OR WITHOUT THE DISTRICT.									Total Deaths in Institutions in Liverpool District, whether of "Residents" or "Non-Residents."
		Under 1	1—	3—	5—	15—	25—	45—	65—		
All Causes	Certified .....	11161	1309	404	136	317	453	1142	2975	4425	7401
	Uncertified .....	22	2	—	—	—	—	—	8	12	—
1. Typhoid and Paratyphoid Fevers .....	1	—	—	—	—	—	1	—	—	—	2
2. Measles .....	176	52	99	17	8	—	—	—	—	—	134
3. Scarlet Fever .....	2	—	—	1	—	1	—	—	—	—	5
4. Whooping Cough .....	105	40	55	10	—	—	—	—	—	—	74
5. Diphtheria .....	139	3	19	39	76	2	—	—	—	—	140
6. Influenza .....	66	4	2	1	—	2	9	26	22	10	10
7. Encephalitis Lethargica .....	14	—	—	—	—	2	8	3	1	—	10
8. Cerebro-spinal Fever .....	55	25	13	2	6	5	3	1	—	—	51
9. Tuberculosis of Respiratory System ...	713	4	4	1	14	159	292	196	43	459	459
10. Other Tuberculous Diseases .....	126	10	23	15	25	21	14	13	5	124	124
11. Syphilis .....	51	4	—	—	—	—	7	33	7	51	51
12. General Paralysis of the Insane .....	23	—	—	—	—	—	9	12	2	5	5
13. Cancer .....	1301	—	2	—	1	10	109	624	555	926	926
14. Diabetes .....	88	—	—	—	—	4	9	30	45	83	83
15. Cerebral Haemorrhage .....	476	—	—	—	—	3	14	156	303	314	314
16. Heart Disease .....	2444	1	2	3	19	42	153	705	1519	1167	1167
17. Aneurysm .....	29	—	—	—	—	3	2	17	7	16	16
18. Other Circulatory Diseases .....	723	—	—	—	—	—	5	163	555	379	379
19. Bronchitis .....	319	27	6	—	4	1	15	86	180	119	119
20. Pneumonia (all forms) .....	1004	241	124	15	30	34	129	232	199	763	763
21. Other Respiratory Diseases .....	100	2	2	1	1	8	17	35	34	57	57
22. Peptic Ulcer .....	107	—	—	—	—	3	15	65	24	120	120
23. Diarrhoea, etc. .....	150	121	10	3	1	3	2	7	3	117	117
24. Appendicitis .....	43	—	1	1	9	9	8	11	4	55	55
25. Cirrhosis of Liver .....	14	—	—	—	—	—	1	10	3	12	12
26. Other Diseases of Liver .....	59	—	—	—	1	1	5	27	25	41	41
27. Other Digestive Diseases .....	174	21	—	4	11	7	19	46	66	276	276
28. Acute and Chronic Nephritis .....	350	1	1	—	5	20	42	130	151	280	280
29. Puerperal Sepsis .....	20	—	—	—	—	4	16	—	—	25	25
30. Other Puerperal Causes .....	44	—	—	—	—	10	32	2	—	43	43
31. Congenital Debility, Premature Birth, Malformations, etc. ....	624	622	1	—	1	—	—	—	—	—	457
32. Senility .....	277	—	—	—	—	—	—	9	268	183	183
33. Suicide .....	77	—	—	—	—	8	24	27	18	15	15
34. Other Violence .....	287	13	15	13	25	29	37	64	91	207	207
35. Other Defined Causes .....	989	120	25	10	79	61	143	250	301	677	677
36. Causes Ill-defined or unknown.....	13	—	—	—	1	—	3	3	6	4	4
TOTALS .....	11183	1311	404	136	317	453	1142	2983	4437	7401	



## CITY OF LIVERPOOL.

## Infant Mortality during the year 1936.

Net Deaths from stated Causes at various Ages under One Year.

CAUSE OF DEATH.		Under 1 Week.	1 Week and under 2 Weeks.	2 Weeks and under 3 Weeks.	3 Weeks and under 4 Weeks.	Total under 4 Weeks.	4 Weeks and under 3 Months.	3 Months and under 6 Months.	6 Months and under 9 Months.	9 Months and under 12 Months.	Total Deaths under One Year.
<b>All Causes.</b>	Certified ...	390	78	66	43	577	199	217	180	136	1309
	Uncertified ...	2	—	—	—	2	—	—	—	—	2
Chicken-pox	...	—	—	—	—	—	—	—	—	—	—
Measles	...	—	—	—	—	—	—	2	18	32	52
Scarlet Fever	...	—	—	—	—	—	—	—	—	—	—
Whooping Cough	...	—	—	—	1	—	1	11	13	13	40
Diphtheria	...	—	—	—	—	—	—	1	1	1	3
Cerebro Spinal Fever	...	—	—	—	1	—	1	6	12	6	25
Influenza	...	—	—	—	—	—	1	1	1	1	4
Erysipelas	...	—	—	—	—	—	3	1	—	—	4
Pulmonary Tuberculosis	...	—	—	—	—	—	1	—	3	—	4
Tuberculous Meningitis	...	—	—	—	—	—	—	4	3	1	8
Other Tuberculous Diseases	...	—	—	—	—	—	—	—	2	2	4
Meningitis (not Tuberculous)	...	—	—	1	—	1	—	1	1	1	4
Convulsions	...	—	—	—	1	1	1	3	1	4	13
Laryngitis	...	—	—	—	—	—	—	—	—	—	—
Bronchitis	...	—	—	—	1	—	1	2	9	11	3
Pneumonia (all forms)	...	—	—	11	11	7	6	35	49	57	50
Diarrhoea	...	—	—	—	—	—	—	—	4	5	15
Enteritis	...	—	—	—	1	6	4	14	24	30	24
Other Diseases of Stomach	...	—	—	—	—	—	—	6	1	2	9
Syphilis	...	—	—	—	—	—	1	1	2	1	4
Rickets	...	—	—	—	—	—	1	1	1	—	3
Suffocation	...	—	—	—	2	—	1	3	—	1	7
Injury at Birth	...	—	—	51	11	4	2	68	—	—	68
Atelectasis	...	—	—	35	2	1	—	38	1	—	39
Malformations	...	—	—	36	15	8	5	64	23	11	105
Premature Birth	...	—	—	224	22	20	13	279	33	7	320
Atrophy, Debility and Marasmus...	...	—	—	12	2	3	6	23	22	20	67
Other Causes	...	—	—	19	7	13	6	45	17	40	139
		392	78	66	43	579	199	217	180	136	1311

Net Births in the year

{ Legitimate ... 16,596  
Illegitimate ... 807

Net Deaths in the year of

{ Legitimate Infants 1,234  
Illegitimate Infants 77



## CITY OF LIVERPOOL.

## Notifiable Diseases (other than Tuberculosis) during the Year 1936.

DISEASE.	At all Ages.	NUMBER OF CASES NOTIFIED.													Cases admitted to Hospital	TOTAL DEATHS
		At Ages—Years														
		Under 1	1—	2—	3—	4—	5—	10—	15—	20—	35—	45—	65—			
Small-pox .....	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Scarlet Fever .....	1600	10	61	108	131	153	755	216	69	78	12	7	—	1026	2	
Diphtheria .....	2179	14	70	144	195	223	917	352	93	135	25	11	—	2124	139	
Enteric Fever (including Paratyphoid) .....	21	—	—	—	—	—	5	1	5	6	3	1	—	20	1	
Puerperal Fever .....	42	—	—	—	—	—	—	—	—	36	6	—	—	40	20	
Puerperal Pyrexia .....	344	—	—	—	—	—	—	—	19	285	38	2	—	322	—	
Pneumonia .....	1680	96	150	80	53	50	136	59	106	347	207	308	88	622	406	
Cerebro-spinal Fever .....	94	37	14	9	4	1	7	6	4	9	1	2	—	89	55	
Poliomyelitis and Polioencephalitis ..	15	1	1	2	2	2	1	3	2	1	—	—	—	15	1	
Encephalitis Lethargica .....	23	—	—	—	—	—	—	—	—	14	4	4	1	22	14	
Dysentery .....	7	—	1	1	1	1	1	—	—	—	1	1	—	6	3	
Ophthalmia Neonatorum .....	691	691	—	—	—	—	—	—	—	—	—	—	—	158	—	
Erysipelas .....	713	20	6	5	5	5	14	35	36	123	115	248	101	509	36	
Malaria .....	41	—	—	—	—	—	—	—	3	25	5	8	—	27	3	
Anthrax .....	1	—	—	—	—	—	—	—	—	—	1	—	—	1	—	
*Measles .....	7240	608	936	866	834	948	2690	254	48	36	10	10	—	712	176	
*Chickenpox .....	1811	69	69	98	120	217	1016	189	19	12	1	1	—	144	—	
TOTALS .....	16502	1546	1308	1313	1345	1600	5542	1115	404	1107	429	603	190	5837	856	

\* Voluntarily notifiable.



## OF LIVERPOOL

## APPENDIX

